

Manual No. 62-254

Western Auto

OPERATION AND SERVICE INSTRUCTIONS Wizard Front Tine Tiller

STOCK NUMBER
94-2105-8

MODEL NUMBER
MTD2105A98

FACTORY NUMBER
219-355-098



Thank you for purchasing an American-built product.

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WIZARD TILLER WARRANTY

MTD2002A98, MTD2105A98, MTD3109A98 and MTD4109A98

1 YEAR LIMITED WARRANTY

This Wizard tiller will be repaired without charge by Western Auto Supply Company if it fails due to defective materials or workmanship within one year of purchase date.

For repair service return tiller with proof of purchase date to any participating Western Auto Store. Excluded from this warranty is any unit which has been altered, misused, abused, used for commercial or rental use. Repair by other than a Western Auto authorized service facility is also excluded.

This warranty does not cover minor mechanical adjustments which are not due to defects in material or workmanship. For assistance in making such adjustments, consult your owner's manual.

Also excluded from Western Auto's warranty is the engine used on Wizard tillers which is warranted by the engine manufacturer. Repair service arrangements for the engine may be handled through any participating Western Auto Store.

If difficulty is encountered in having this warranty honored, contact: Western Auto Supply Company, Consumer Affairs Section, General Service Department, 2107 Grand Avenue, Kansas City, Missouri 64108. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

WARNING: This unit is equipped with an internal combustion engine and should not be used on or near any unimproved forest-covered, brush-covered or grass-covered land unless the engine's exhaust system is equipped with a spark arrester meeting applicable local or state laws (if any). If a spark arrester is used, it should be maintained in effective working order by the operator.

In the State of California the above is required by law (Section 4442 of the California Public Resources Code). Other states may have similar laws. Federal laws apply on federal lands. A spark arrester for the muffler is available through participating Western Auto Stores.



To reduce the potential for any injury, comply with the following safety instructions. Failure to comply with the instructions may result in personal injury.

SAFE OPERATION PRACTICES FOR TILLERS

1. It is suggested that this manual be read in its entirety before attempting to assemble or operate this unit. Keep this manual in a safe place for future reference and for ordering replacement parts.
2. Your tiller is a precision piece of power equipment, not a plaything. Therefore, exercise extreme caution at all times.
3. Read this Owner's Manual carefully. Be thoroughly familiar with the controls and the proper use of the equipment.
4. Never allow children to operate a power tiller. Only persons well acquainted with these rules of safe operation should be allowed to use your tiller.
5. No one should operate this unit while intoxicated or while taking medication that impairs the senses or reactions.
6. Keep the area of operation clear of all persons, particularly small children and pets.
7. Do not operate equipment when barefoot or wearing open sandals. Always wear substantial footwear.
8. Do not wear loose fitting clothing that could get caught on the tiller.
9. Do not start the engine unless the shift lever is in the neutral (N) position.
10. Do not stand in front of the tiller while starting the engine.
11. Do not place feet and hands on or near the tines when starting the engine or while the engine is running.
12. Never attempt to make a wheel or depth bar adjustment while the engine is running.
13. Do not leave the tiller unattended with the engine running.
14. Do not walk in front of the tiller while the engine is running.
15. Check the fuel before starting the engine. Gasoline is an extremely flammable fuel. Do not fill gasoline tank indoors, when the engine is running, or while the engine is still hot. Wipe off any spilled gasoline before starting the engine as it may cause a fire or explosion.
16. Do not run the engine while indoors. Exhaust gases are deadly poisonous.
17. Be careful not to touch the muffler after the engine has been running. It is hot.
18. Do not change the engine governor settings or overspeed the engine. Excessive engine speeds are dangerous.
19. Before any maintenance work is performed or adjustments are made, remove the spark plug wire and ground it on the engine block for added safety.
20. Use caution when tilling near buildings and fences. Rotating tines can cause damage or injury.
21. Before attempting to remove rocks, bricks and other objects from tines, stop the engine and be sure the tines have stopped completely. Disconnect the spark plug wire and ground to prevent accidental starting.
22. Check the tine and engine mounting bolts at frequent intervals for proper tightness.
23. Keep all nuts, bolts and screws tight to be sure the equipment is in safe working condition.
24. Never store the equipment with gasoline in the tank inside of a building where fumes may reach an open flame or spark. Allow the engine to cool before storing in any enclosure.

NOTE

This unit is shipped WITHOUT GASOLINE or OIL. After assembly, see separate engine section of this manual for proper fuel and engine oil recommendations.

NOTE

Right and left hand is determined when standing behind the tiller in the operating position.

ASSEMBLY INSTRUCTIONS

Tools Required for Assembly:

- (2) 1/2" Wrenches or Sockets*
- (2) 9/16" Wrenches or Sockets*
- (1) Adjustable Wrench
- (1) Phillips Screwdriver
- (1) Flat Blade Screwdriver

*The adjustable wrench may be used in place of one of the wrenches.

UNPACKING

Remove the tiller and loose parts from the carton. Make certain all parts and literature have been removed before the carton is discarded.

Extend all control cables and place on the floor. Be careful not to bend or kink control cables.

Parts in Carton:

- Tiller
- Handle Panel Assembly
- Depth Stake
- Tailpiece
- Hardware Pack

Contents of Hardware Pack: (See Figure 1)

- A (1) U-Clevis Pin
- B (4) Hairpin Clips
- C (3) Clevis Pins
- D (6) Hex Bolts 3/8-16 x 1" Long
- E (2) Belleville Washers 3/8" I.D.
- F (6) Lock Washers 3/8" I.D.
- G (6) Hex Nuts 3/8-16 Thread
- J (1) Phillips Head Self-Tapping Screw
- K (1) Left Hand Cable Hold-Down (Black)
- L (1) Right Hand Cable Hold-Down (Brown)
- M (2) Self-Tapping Screws
- N (3) Cable Ties

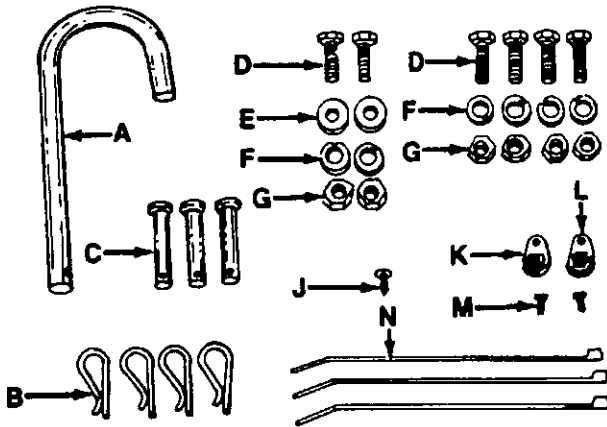


FIGURE 1.

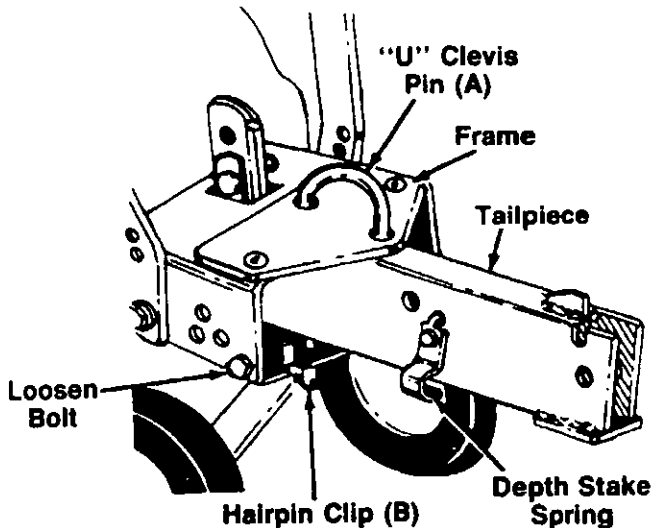


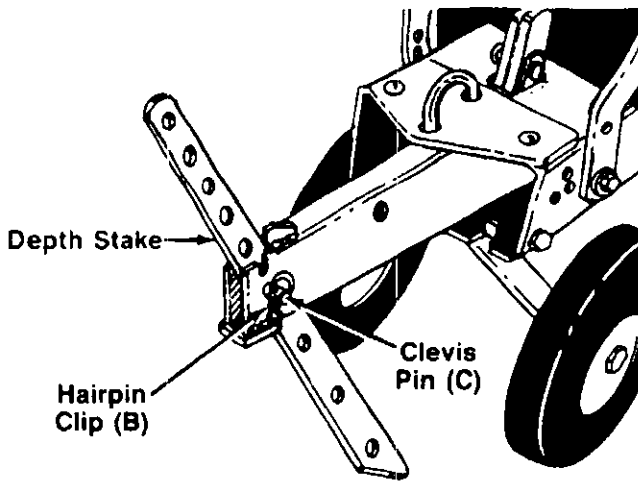
FIGURE 2.

TAILPIECE INSTALLATION

Slide the tailpiece into the frame. If necessary, loosen the two bolts on each side of the frame as shown in figure 2 in order to insert the tailpiece. Secure with "U"-clevis pin (A) and hairpin clip (B). Tighten the bolts on the frame. See figure 2.

NOTE

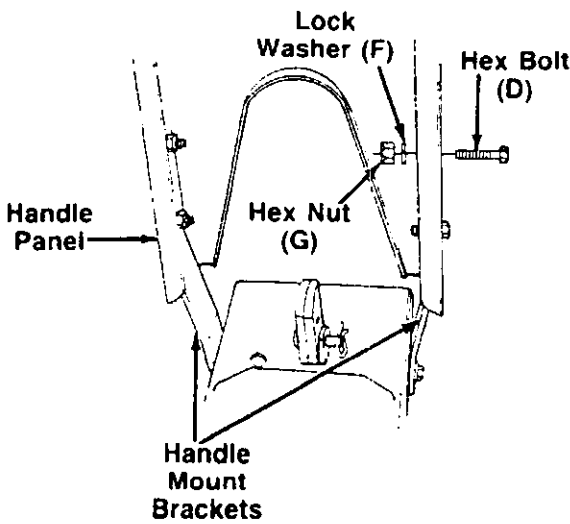
The U-clevis pin which secures the tailpiece can be set for two different methods of operation. Refer to "Swinging Tailpiece/Depth Stake" section on page 11.



DEPTH STAKE INSTALLATION

Slide the depth stake into the tailpiece to desired depth. Pointed end of depth stake should face forward as shown in figure 3. Secure with one clevis pin (C) and hairpin clip (B).

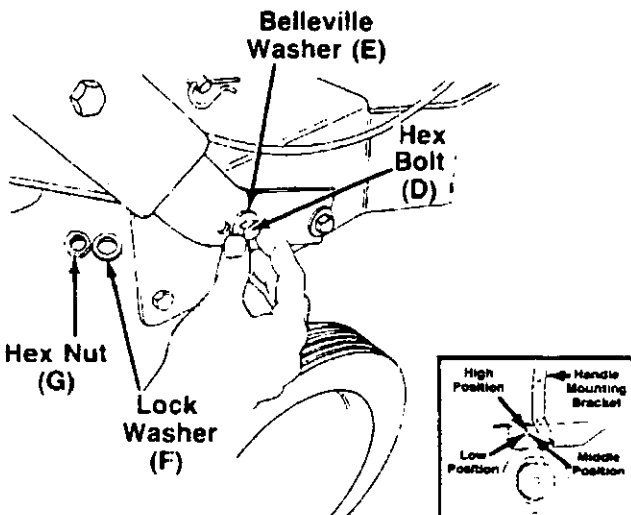
FIGURE 3.



HANDLE PANEL INSTALLATION

1. The handle mounting brackets are in an upright position for shipping purposes. Slide the handle panel assembly down over the handle mounting brackets. Secure with hex bolts (D), lock washers (F) and hex nuts (G). See figure 4.

FIGURE 4.



2. There are three holes in the frame, which provide three handle height positions. Pull the handle assembly back and select position desired, aligning one of the holes in handle mounting bracket with selected hole in the frame. See figure 5, inset.
3. Place belleville washers (E) onto hex bolts (D) (crowned side of washer goes against head of bolt). Place bolts through handle mounting brackets and frame. Secure with lock washers (F) and hex nuts (G). See figure 5. A 9/16" wrench and an adjustable wrench is required.
4. Tighten securely all nuts and bolts used to assemble the handle, including handle pivot bolts.

FIGURE 5.

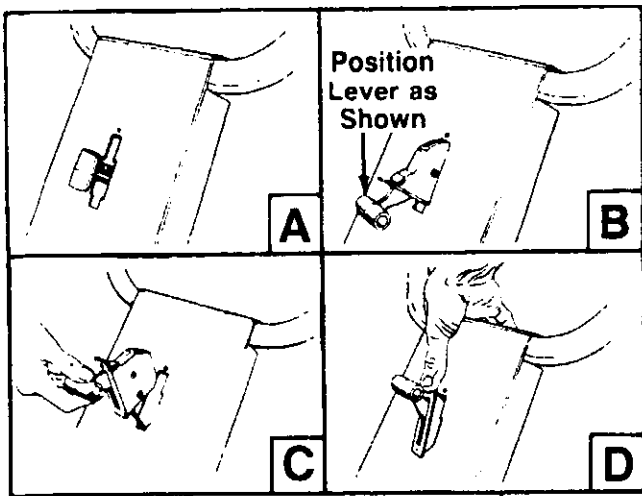


FIGURE 6.

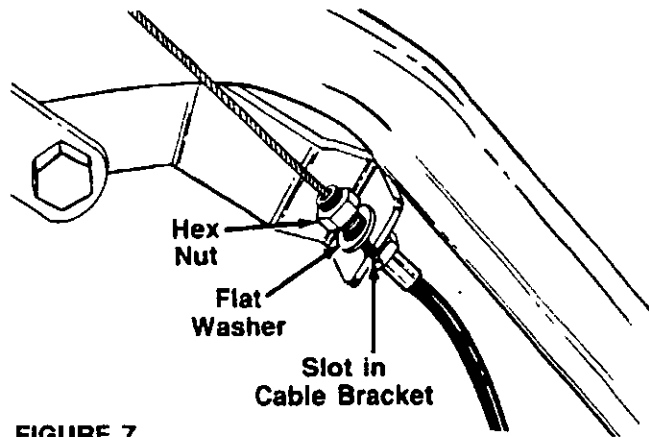
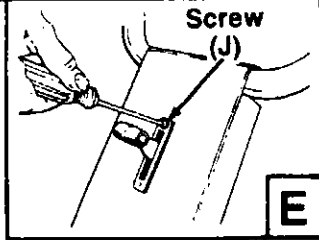


FIGURE 7.

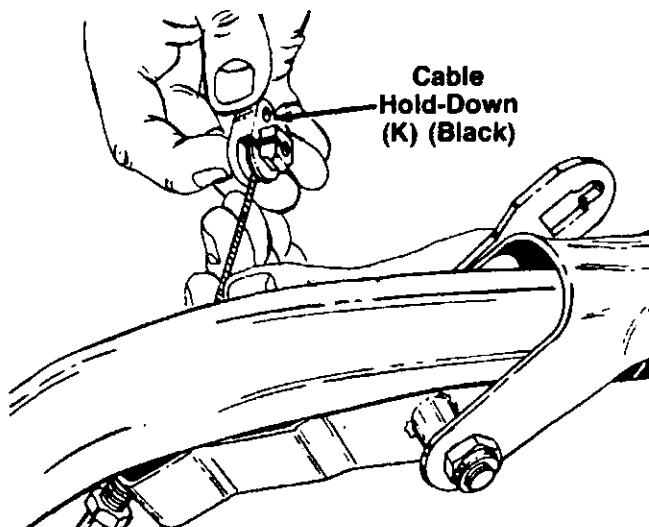


FIGURE 8.

THROTTLE CONTROL ASSEMBLY

The throttle control is already attached to the engine. Assemble the throttle control to the handle panel as follows (be careful not to kink the cable).

1. Route the throttle control cable between the handle mounting brackets. Hold the throttle control assembly beneath the handle panel. Turn the control sideways and insert the lever up through the wide portion of the slot on the handle panel. See figure 6A.
2. After the end of the lever is through the slot, turn and then tip the control forward as shown in figure 6B.

NOTE

The lever must be all the way to the back of the control housing as shown in figure 6B.

3. Slide the control completely through the slot as shown in figure 6C.
4. Push the control back into the slot in the handle panel and press in place. See figure 6D. Be certain the control is locked securely into the slot.
5. Secure the throttle control to the handle panel using phillips head self-tapping screw (J). See figure 6E.

ATTACHING THE CLUTCH CONTROL CABLES

The clutch control cables, already attached to the idler brackets, are labeled FORWARD and REVERSE. The left hand cable hold-down is black and is marked with an "L." The right hand cable hold-down is brown and is marked with an "R." See figure 8.

1. Attach the forward clutch cable to the left handle as follows (be careful not to kink the cable).
 - a. Remove one hex nut and flat washer from the end of the casing on the forward clutch cable. Slip the wire through the slot on the cable bracket on the left handle. Push the end of the casing up through the cable bracket. Rethread the hex nut on the end of the cable. Do not tighten at this time. See figure 7.
 - b. Hook the barrel end of the cable into the left hand cable hold-down (K) (black). Slide the cable around in the slot as shown in figure 8.

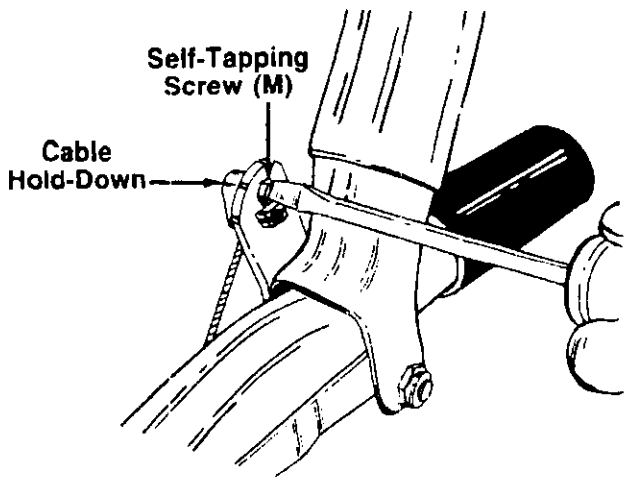


FIGURE 9.

- c. Pull the cable upwards to obtain slack, lift the left hand clutch grip and insert the left hand cable hold-down into the clutch grip. Secure with self-tapping screw (M). See figure 9.

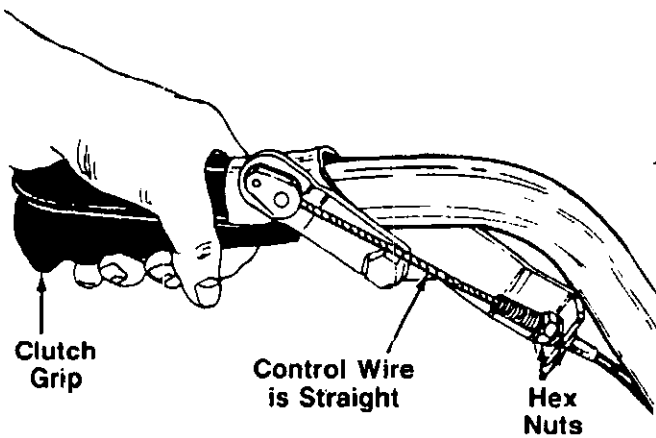


FIGURE 10.

- d. With the clutch lever released (in the "up" position), adjust the bottom nut at the cable bracket so there is only a slight amount of slack in the control wire. Tighten the upper nut against the bracket. Squeeze the clutch lever against the handle. The control wire should now be straight. See figure 10.

NOTE

Do not overtighten control wire. Too much tension may cause it to break.

- 2. Attach the reverse clutch cable to the right handle in the same manner, using the right hand cable hold-down (L) (brown).



The forward and reverse clutch cable adjustment must be checked before the unit is operated as instructed in the Final Adjustment section on page 8.

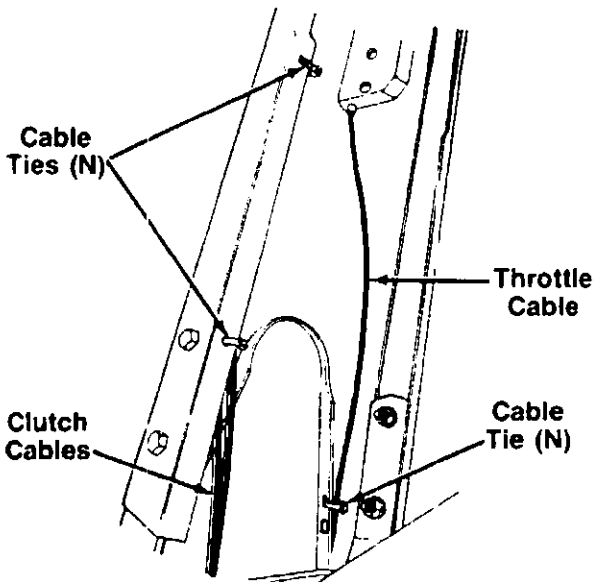


FIGURE 11.

- 3. Secure the control cables to the handle panel as follows.
 - a. Secure the forward and reverse clutch cables to the holes in back of the handle panel (left hand side) using two cable ties (N) as shown in figure 11. Leave ties fairly loose.
 - b. Secure the throttle control cable to one of the holes in the inside of the handle panel (right hand side) as shown in figure 11. Leave tie fairly loose.
- 4. Trim excess ends of cable ties.

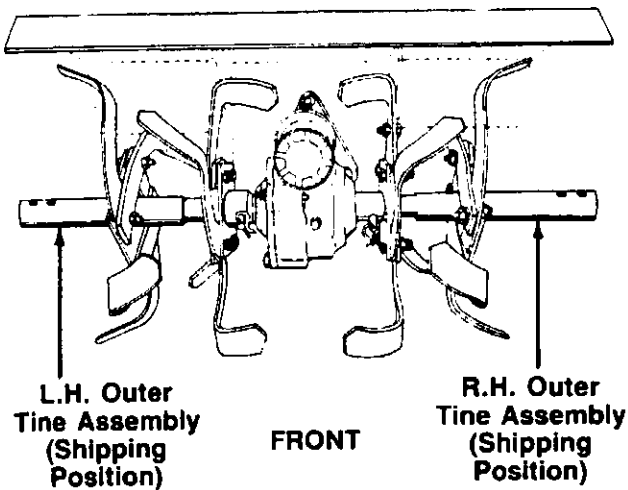


FIGURE 12.

TINE INSTALLATION

The inner tine assemblies are installed in their correct position at the factory. The outer tine assemblies have been reversed for shipping purposes only. See figure

← 12.

1. Remove both outer tine assemblies.
2. Place the left hand outer tine assembly (was shipped on the right hand tine shaft) onto the left hand shaft.

3. Align one of the holes in the tine assembly with the hole in the tine shaft. Using the end hole on the tine assembly will give a tilling width of 28". Using the second hole will give a tilling width of 26". See figure 13.

←

4. Secure with clevis pin (C) and hairpin clip (B).
5. Install the right hand outer tine assembly in the same manner.

➡ NOTE

Make certain tines are installed so that the sharp edge of the tines will enter the soil first when in forward drive.

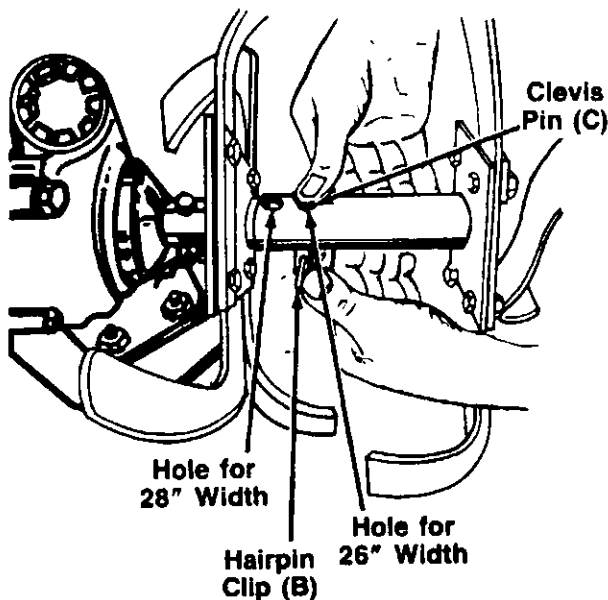


FIGURE 13.

FINAL CLUTCH ADJUSTMENT

To check the forward and reverse clutch cable adjustment, proceed as follows.

1. Disconnect the spark plug wire from the spark plug to prevent accidental starting. Secure the end of spark plug wire in the "V" slot on the engine. See figure 14.

←

2. With both clutch grips released (neutral position), pull the starter rope several times. **The tines should not turn.** If they turn forward, loosen the hex nut below the cable bracket on the **left** handle a few turns. Tighten the hex nuts above the bracket. If they turn in reverse, adjust the hex nuts at the cable bracket on the **right** handle in the same manner.

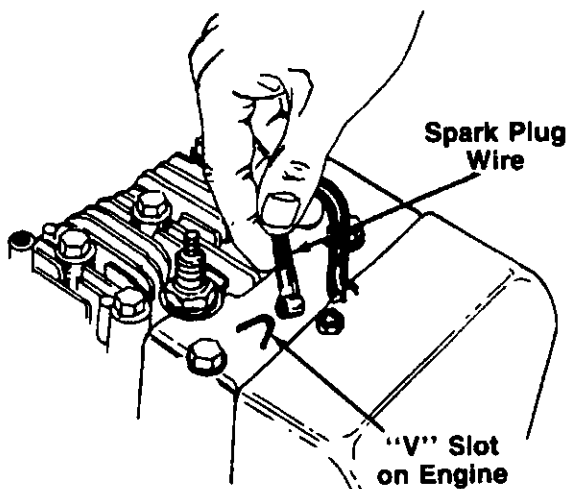


FIGURE 14.

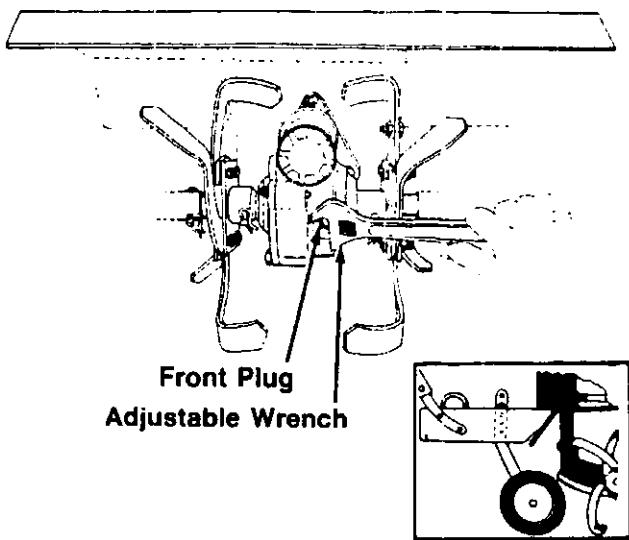


FIGURE 15.

CHECK GEAR CASE LUBRICANT

After the tiller is assembled and before gasoline and oil are added to the engine, check the tiller gear case for correct lubricant level.

1. Level the tiller by placing wheel yoke in the position shown in figure 15, inset (clevis pin is placed in the second hole from the top).
2. Remove the front pipe plug from tiller gear case. See figure 15.

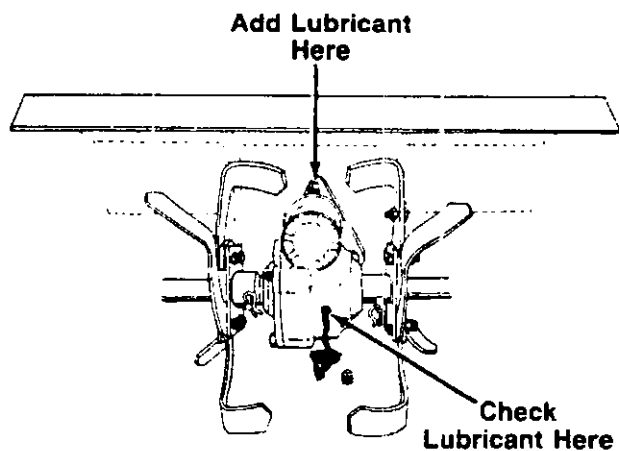


FIGURE 16.

3. If lubricant flows from the outlet, lubricant is at the correct level. See figure 16.
4. If lubricant fails to flow from the outlet, lubricant should be added. USE PENNANT OIL EP #35000, which is available in an 8 ounce squeeze tube. Order part number 737-0136 from participating Western Auto Stores.

CONTROLS

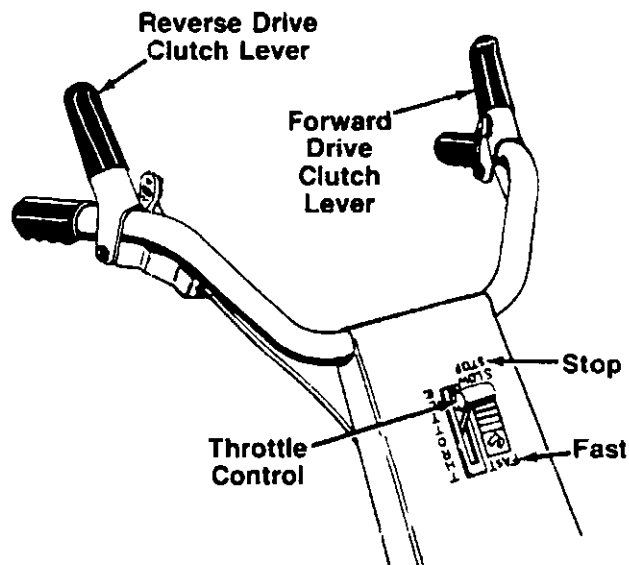


FIGURE 17.

THROTTLE CONTROL

The throttle control lever is located in the center of the handle panel. It controls the engine speed and stops the engine. See figure 17.

FORWARD DRIVE CLUTCH LEVER

The forward drive clutch lever is located on the left handle. See figure 17. Squeezing the lever against the handle engages the forward tine drive. Release the lever to stop the forward motion.

REVERSE DRIVE CLUTCH LEVER

The reverse drive clutch lever is located on the right handle. See figure 17. Squeezing the lever against the handle moves the tines in reverse. Release the lever to stop the reverse drive.

NOTE

Never engage both the forward and reverse drive at the same time, or the engine will stall.

DEPTH STAKE

The depth stake controls the tilling depth. Refer to "How to Use Your Tiller" section on this page.

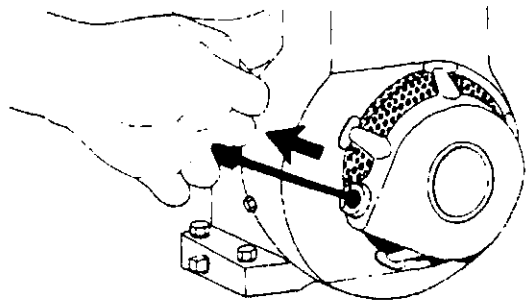


FIGURE 18.

OPERATION

GAS AND OIL FILL-UP

Service the engine with gasoline and oil as instructed in the separate engine section of this manual. Read instructions carefully.

NOTE

Your tiller is shipped without oil; however, a small amount of oil may be present from the factory.

TO START ENGINE



WARNING

BE SURE NO ONE IS STANDING IN FRONT OF THE TILLER WHILE THE ENGINE IS RUNNING OR BEING STARTED.

1. Attach spark plug wire to spark plug.
2. Move the throttle control lever forward to FAST or START position. Make certain both clutch levers are released. See figure 17.
3. Move choke lever to CHOKE position.

NOTE

A warm engine may not require choking.

4. Grasp starter handle (see figure 18) and pull rope out slowly until engine reaches start of compression cycle (rope will pull slightly harder at this point). Let the rope rewind slowly.
5. Pull rope with a rapid, continuous, full arm stroke. Keep a firm grip on start handle. Let rope rewind slowly. Do not let starter handle snap back against starter.
6. Repeat preceding instructions 4 and 5 until engine fires. When engine starts, move choke lever on engine halfway between CHOKE and RUN.

7. Move throttle control to SLOW position for a few minutes warm-up. Move choke lever to RUN position as engine warms up.

NOTE

In order to idle smoothly, a new engine may require 3 to 5 minutes running above slow idle speed. Idle speed has been adjusted to be correct after this break-in period.

TO STOP ENGINE

1. Move throttle control lever to STOP position. See figure 17.
2. Disconnect spark plug wire from spark plug and ground against the engine to prevent accidental starting while equipment is unattended.

HOW TO USE YOUR TILLER

The tiller is a precision built machine designed for seed bed preparation, cultivating, furrowing and mulching. It is engineered to minimize the hardest work in the vegetable or flower garden, to till the soil for planting and cultivating, and to perform many other useful labor saving tasks in the garden. With the proper amount of care and maintenance, this machine will provide the owner with many years of service.

WHEEL POSITION

The tiller is shipped with the wheels adjusted such that the unit sits level. During digging as the tines enter the ground and the front of the tiller lowers, the wheels must be raised to level the unit. This is essential for proper engine operation. This adjustment is made by removing the clevis pin and hairpin clip from wheel yoke, raising the wheels to the desired height, and replacing the clevis pin and hairpin clip. See figure 19.

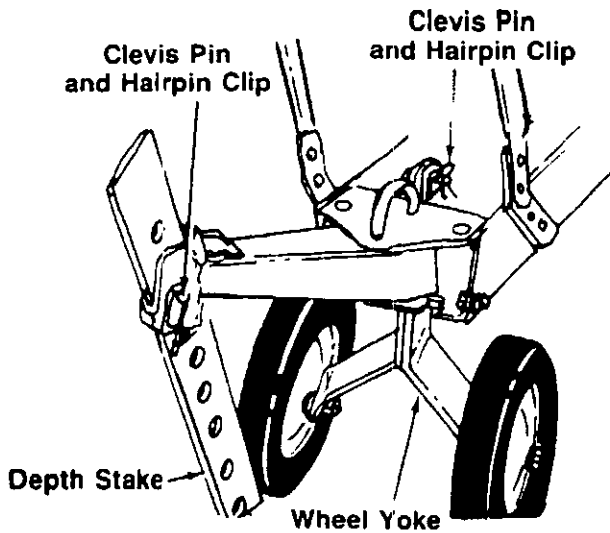


FIGURE 19.

SWINGING TAILPIECE/DEPTH STAKE

The entire tailpiece and depth stake can be either locked in position or allowed to swing freely. The tailpiece and depth stake are used in the unlocked position when it is necessary to maneuver in small areas. To lock, line up the holes in the rear frame with the holes in the tailpiece, and push in the short end of the U-clevis pin. To allow the tailpiece and depth stake to swing, pull out the U-clevis pin and place it in the forward hole as shown in figure 20.

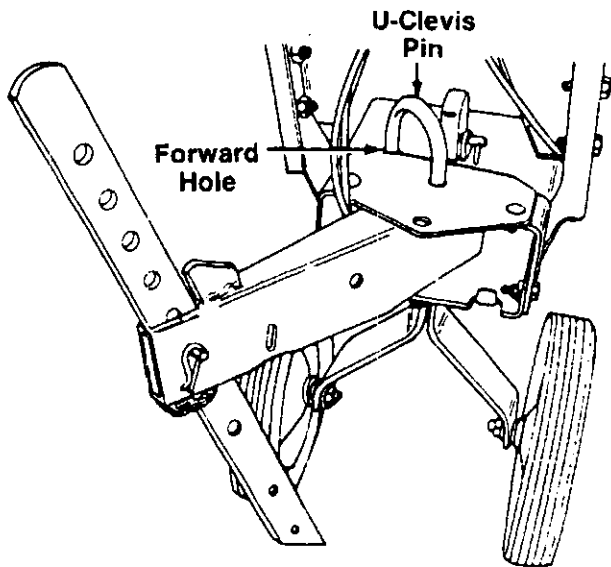


FIGURE 20.

CONTROLLING SPEED AND TILLING DEPTH:

1. **Wheel Yoke Adjustment:** Place wheel yoke so that the wheels are forward (nearest point between wheels and tines) for shallow tilling, cultivating and transport. This will increase the forward speed. Turn yoke around (farthest point between wheels and tines) for deep tilling. Forward speed will decrease. See figures 19 and 21.

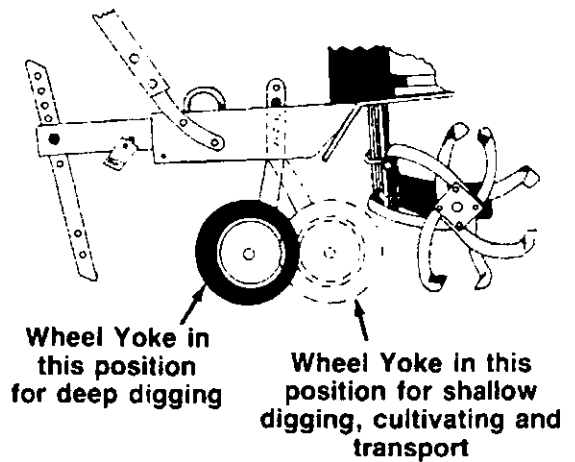


FIGURE 21.

2. **Depth Stake Adjustment:** The depth stake acts as a brake for the tiller and controls the depth and speed at which the machine will operate. Remove the clevis pin and hairpin clip to raise or lower depth stake. See figure 19.

By increasing the depth of the depth stake, the forward speed of the machine is reduced, and the working depth is increased. See figure 22. When the depth stake is raised, the working depth of the machine is reduced and the forward speed is increased. The working depth of the machine may be predetermined by setting the depth stake and wheels so that the wheels are about four inches from the ground when the tines and depth stake are resting on the ground. This setting will permit a working depth of about four inches. When presetting the working depth, the handles should be adjusted so the hand grips are a little above waist height because the tiller will be lower when the tines and depth stake penetrate the ground.

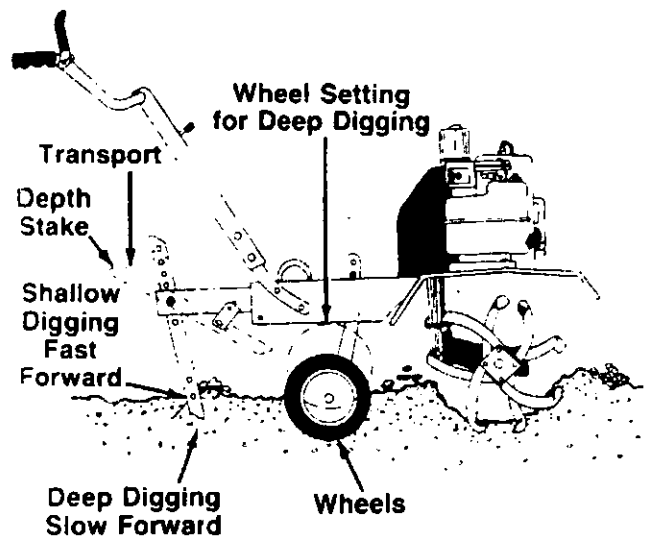


FIGURE 22.

When tilling, leave approximately 8 inches of untilled soil between the first and second tilling paths, then make the third path between the first and second as shown in figure 23. In some soils, the desired depth is obtained the first time over the garden. In other soils, the desired depth is obtained by going over the garden two or three times. In the latter case, the depth stake should be lowered before each succeeding pass over the garden. Passes should be made across the length and width of the garden alternately. Rocks which are turned up should be removed from the garden area.

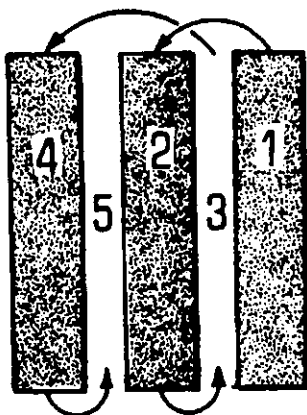


FIGURE 23.

3. **Handle Pressure:** Further control of tilling depth and travel speed can be obtained by variation of pressure on the handles. A downward pressure on the handles will reduce the working depth and increase the forward speed. An upward pressure on the handles will increase the working depth and reduce the forward speed. The type of soil and working conditions will determine the actual setting of the depth stake and the handle pressure required.

4. **Throttle Control:** The throttle control lever adjusts the engine speed and stops the engine. With the throttle control knob pushed completely forward, the carburetor is in START or FAST position. Pulling the throttle back reduces the engine speed to SLOW. Pull the throttle completely back to stop the engine. See figure 17.

Use maximum engine speed for deep tilling. Move the throttle control to SLOW when transporting the tiller.

TRANSPORTING THE TILLER

To transport the tiller to or from the garden, pivot the depth stake forward so it engages the tailpiece and locks out of the way. See figure 22. With the throttle control in SLOW position, the unit will move under its own power, without damaging grass areas as long as it is allowed to move freely. If the operator holds back, it will start to dig.

CULTIVATING

For cultivating, a two to three inch depth is desirable. Setting the wheels and depth stake so that the wheels are about two inches above the ground while the tiller is resting on the tines and depth stake will allow the machine to work at cultivating depth. The throttle should be set to control forward movement to a slow walking speed. With outer tines installed, the working width of the machine is 26 or 28 inches. See figures 24 and 26. For cultivation, this may be reduced to 14 inches by removing the outer tines. See figure 25.

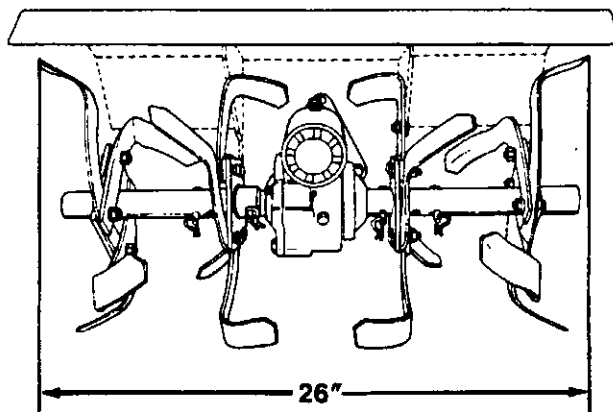


FIGURE 24.

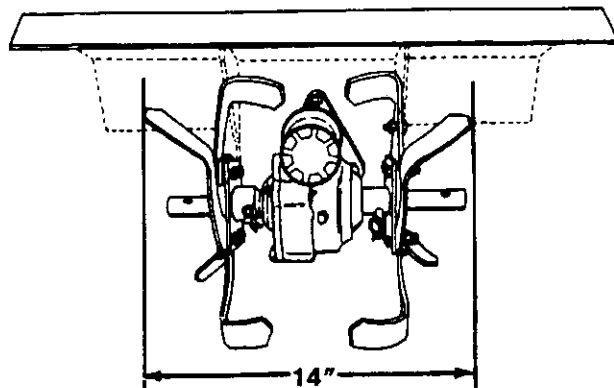


FIGURE 25.

Tilling width can be increased from 26 inches to 28 inches by removing the clevis pin and hairpin clip and sliding the outer tines out one inch, and replacing the clevis pin and hairpin clip. See figure 26.

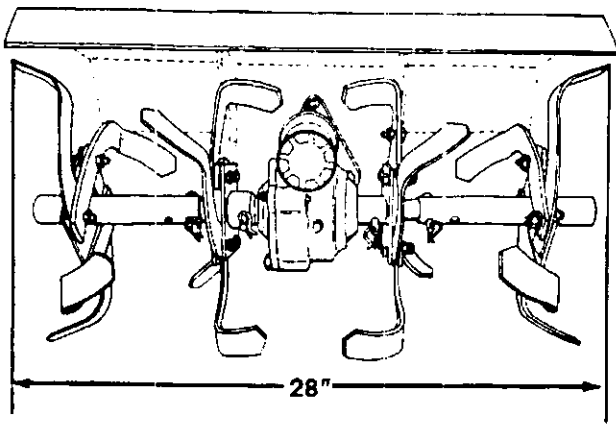


FIGURE 26.

When laying out plant rows, be sure to allow enough width to permit cultivation between the rows. In growing corn or similar crops, check-row planting will permit cross cultivation and practically eliminate hand hoeing. See figure 27.

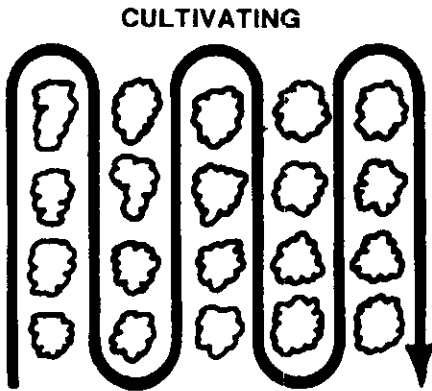


FIGURE 27.

The tiller has many uses other than tilling and cultivating a garden. One of these is the preparation of lawn area for seeding. The tiller will prepare a deep seed bed which will be free of hard untilled spots, allowing a better stand of grass to grow. The tiller is very useful for loosening hard soil for excavation with a shovel. NO tedious hand pickwork will be necessary. Your tiller may be used for mixing compost in the pile, or for mixing it with the soil in your garden. This should be done after the soil has been broken to the full working depth. The compost should be worked in to a depth of six to eight inches. This may be done by working the length of the garden, and then by making separate passes across its width. The addition of decayed organic matter will substantially increase the fertility of your garden. For proper decaying action, fertilizer should be applied and worked in with the mulch materials. Breaking up leaves and straw and mixing it with several inches of soil causes the soil to hold moisture longer and allows proper aeration of the plant root system. This also retards the growth of weeds.

The U.S. Department of Agriculture and various state and local agencies offer published booklets and expert advice on all phases of gardening. They should be consulted regarding soil information, planting dates, and the most satisfactory varieties of crop for your particular area.

ADJUSTMENTS



WARNING

Disconnect the spark plug wire and ground against the engine before performing any adjustments, repairs, or maintenance.

WHEEL ADJUSTMENTS

To adjust the wheel yoke and wheel position, refer to "How To Use Your Tiller," on page 11.

DEPTH STAKE ADJUSTMENT

To adjust the depth stake, refer to "How To Use Your Tiller" on page 11.

TINE WIDTH ADJUSTMENT

To adjust the tine width, refer to "Cultivating" on page 12.

BELT TENSION ADJUSTMENT

Periodic adjustment of the belt tension may be required due to normal stretch and wear on both the forward and reverse belts. Adjustment is needed if the tines seem to hesitate while tilling, but the engine maintains the same speed.

To adjust, loosen the hex nut above the cable bracket a few turns (refer to figure 10). Tighten the lower hex nut against the bracket. Check the adjustment by following the instruction in the "Final Clutch Adjustment" section of Assembly Instructions on page 8.

Test the operation of the tiller. Readjust as necessary.



Do not overtighten control wire. Too much tension may cause it to break.

CARBURETOR ADJUSTMENT



WARNING

If any adjustments are made to the engine while the engine is running (e.g. carburetor), disengage all clutches and tines. Keep clear of all moving parts. Be careful of heated surfaces and muffler.

Minor carburetor adjustment may be required to compensate for differences in fuel, temperature, altitude or load. If adjustments are needed, refer to the engine section of this manual.

NOTE

A dirty air cleaner will cause engine to run rough. Be certain air cleaner is clean and attached to the carburetor before adjusting carburetor. Do not make unnecessary adjustments. Factory settings are satisfactory for most applications and conditions.

THROTTLE CONTROL ADJUSTMENT

To obtain satisfactory engine performance, the engine throttle control must be adjusted properly. If it is necessary to check the engine control adjustments, proceed as follows.

1. Loosen the cable clamp screw. See figure 28.
2. With the throttle control in FAST position and the cable connected to the adapter lever, push the cable through the cable clamp in the direction shown in figure 28 until the adapter lever is as far up as it will go.
3. Tighten the cable clamp screw.
4. Check that the engine stops when throttle control is moved to STOP position. If engine does not stop, loosen cable clamp screw and readjust by pulling cable backward slightly until engine stops. Retighten cable clamp screw.

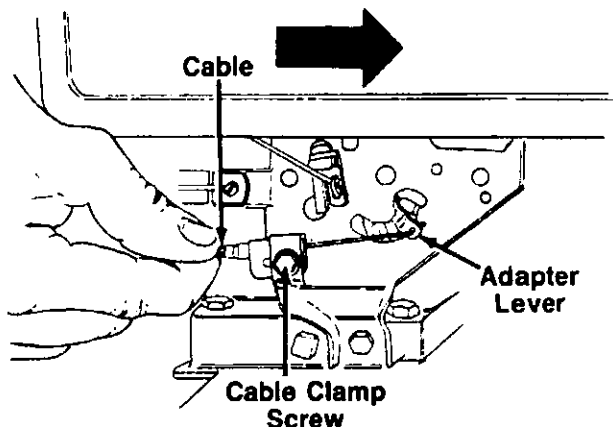


FIGURE 28.

LUBRICATION



WARNING

Always stop engine and disconnect spark plug wire before cleaning, lubricating or doing any kind of work on tiller.

Pivot Points—Remove the belt cover and lubricate all moving parts and pivot points at least once a season using SAE 30 engine oil.

Transmission—Whenever disassembly of transmission is required, transmission should be thoroughly cleaned and lubricated with 6½ ounces of PENNANT OIL EP #35000 (available in an 8 ounces squeeze tube). Order part no. 737-0136 through participating Western Auto Stores. See figure 29.

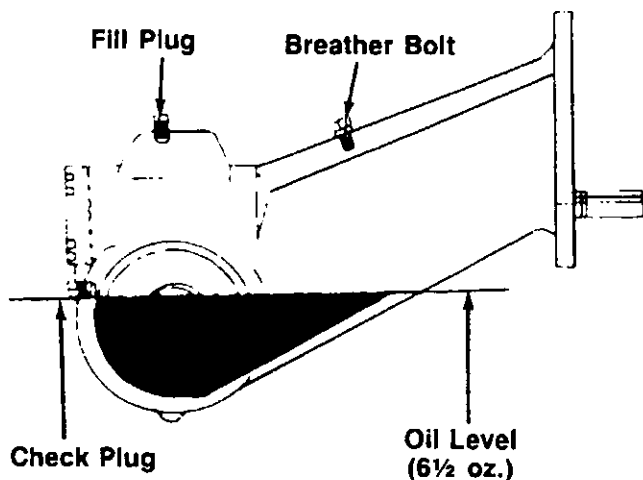


FIGURE 29.

MAINTENANCE

NOTE

Disconnect spark plug wire and ground it against the engine before performing any repairs or maintenance.

TROUBLE SHOOTING

Refer to page 21 of this manual for trouble shooting information.

ENGINE

Refer to the engine section of this manual for all engine maintenance instructions.

CLEANING THE TINE AREA

Clean the underside of the tine shield after each use. The dirt washes off the tines easier if washed off immediately instead of after it dries.

TRANSMISSION

After first two hours of operation and every five hours thereafter, remove the cotter pin from the bearing adjustment cap. Screw the cap in as far as possible using the handle of a pair of pliers or similar tool. Then back it off ½ turn. See figure 30. Replace the cotter pin.

Start the tiller and engage the tines. If the engine stalls out, the bearing adjustment cap should be unscrewed slightly.

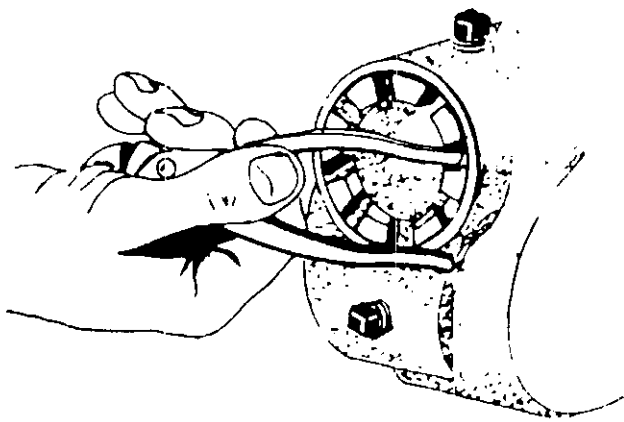


FIGURE 30.

BELT REMOVAL AND REPLACEMENT

Your tiller has been engineered with belts made of special material (Kevlar Tensile). They should not be replaced with an off-the-shelf belt.

If belt replacement is required, order belt or belts by part number through participating Western Auto Stores.

FORWARD DRIVE BELT— Part No. 754-0255
 REVERSE DRIVE BELT— Part No. 754-0189

➡ IMPORTANT

If either the forward or reverse drive belt is replaced for any reason, make certain to readjust the clutch cables to the initial adjustment setting. Refer to Assembly Instructions on pages 7 and 8 of this manual.

Forward Drive Belt (Refer to figure 32)

1. Remove the belt cover by removing three self-tapping screws, one located on top of the belt cover, and one on each side at the bottom.
2. Remove the belt retainer, located at the transmission pulley (bottom pulley), by removing two hex bolts and nuts. See figure 31.

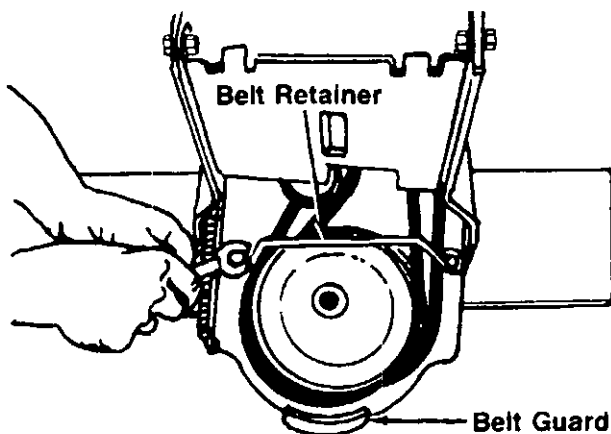


FIGURE 31.

3. Remove the belt guard from the bottom of the transmission pulley by removing one hex nut and lock washer from the inside of the mounting plate assembly. See figure 31.
4. Remove the belt from around the idler pulley. See figure 32.

Reverse Belt (inside belt) has wide side down, toward pulley.

Forward Belt (outside belt) has wide side up, away from pulley.

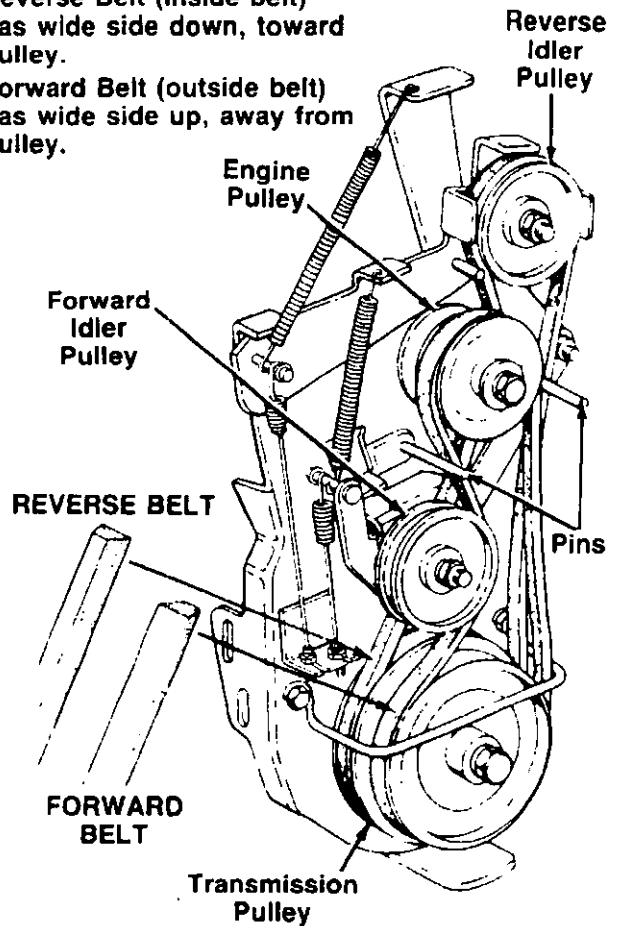


FIGURE 32.

5. Slip the belt off the engine pulley. Remove it from the transmission pulley.
6. Reassemble the new belt, following instructions in reverse order.

➡ NOTE

Upon reassembly, make certain belt is inside the belt guard pins as shown in figure 32.

Reverse Drive Belt (See figure 32)

1. To remove the reverse drive belt, first remove the forward drive belt as instructed in the previous section.
2. Remove the hex nut which holds the reverse idler pulley. See figure 33.

OFF-SEASON STORAGE

If the tiller will not be used for a period longer than 30 days, the following steps should be taken to prepare the tiller for storage.

1. Clean the exterior of engine and the entire tiller thoroughly. Lubricate the tiller as described in the lubrication instructions.
2. Refer to the engine section of this manual for correct engine storage instructions.
3. Wipe tines with oiled rag to prevent rust.
4. Store tiller in a clean, dry area.

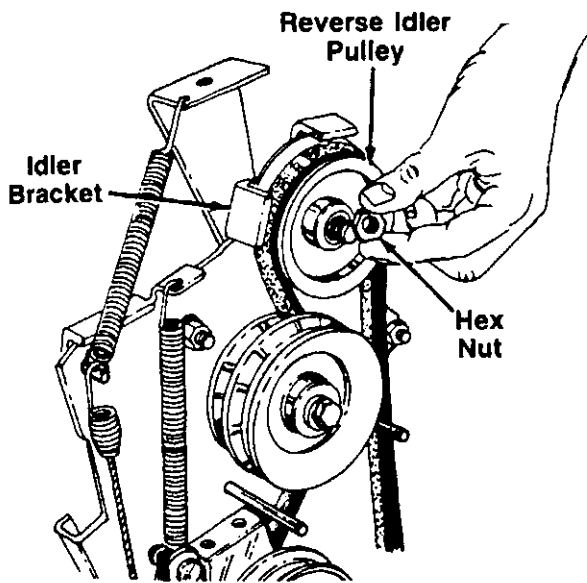


FIGURE 33.

3. Lift up on the idler bracket and remove the idler pulley.
4. Unhook the reverse drive belt from the transmission pulley and slide belt out.
5. Reassemble the new belt, following instructions in reverse order.

➔ NOTE

When storing any type of power equipment in an unventilated or metal storage shed, care should be taken to rustproof the equipment. Using a light oil or silicone, coat the equipment, especially any springs, bearings and cables.

ENGINE OPERATING AND MAINTENANCE INSTRUCTIONS

FOR ENGINE MODEL 130202-3166-01

➔ IMPORTANT

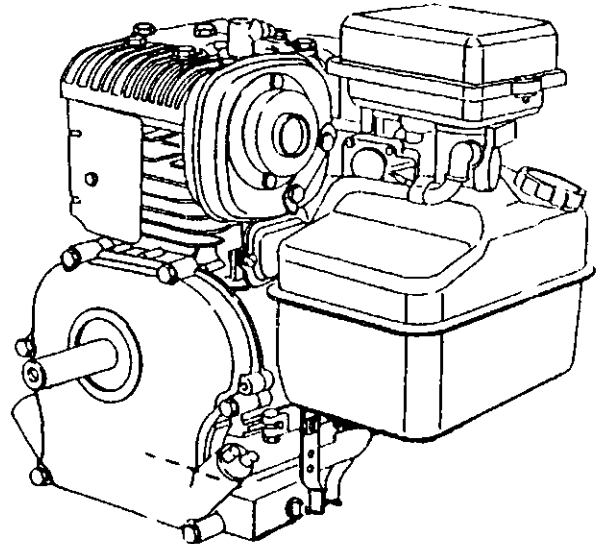
Do not start the engine before reading the following section of this manual.



WARNING

Do not operate engine in an enclosed area. Exhaust gases contain carbon monoxide, an odorless and deadly poison.

Always disconnect spark plug wire from spark plug before performing any repairs or maintenance.

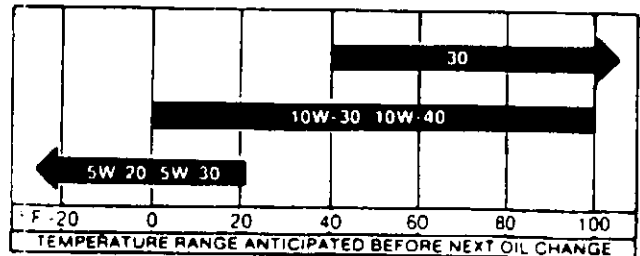


SECTION 1 BEFORE STARTING

Fill Sump With Oil—Use a high quality detergent oil classified "For Service SF, SE, SD or SC." Nothing should be added to the recommended oil.

Place engine level. Clean area around oil fill before removing oil fill plug. Fill crankcase to the point of overflowing. **Pour slowly.** Capacity approximately 1¼ pints. **Do not overfill.** Oil fill plug must be securely assembled in engine at all times when engine is running.

Recommended SAE Viscosity Grades

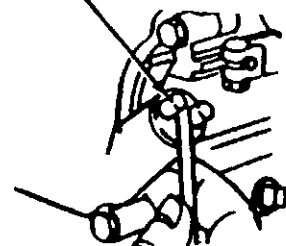


Fill Fuel Tank—The engine will operate satisfactorily on any gasoline intended for automotive use. **DO NOT MIX OIL WITH GASOLINE.**

The use of clean, fresh, **lead-free** gasoline is recommended. Leaded gasoline may be used if lead-free is not available. A minimum of 77 octane is recommended. The use of lead-free gasoline results in fewer combustion deposits and longer valve life.


Do not fill fuel tank to point of overflowing. Allow tank space for fuel expansion.

Oil Fill Plug



SECTION 2 STARTING

Start, store and fuel engine in a level position.

 **WARNING:** ALWAYS KEEP HANDS AND FEET CLEAR OF TINES OR OTHER ROTATING PARTS.

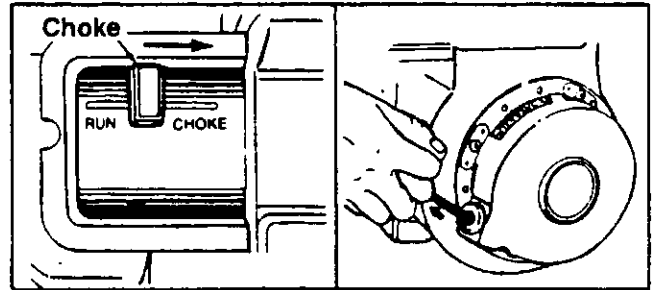
To Start Engine

1. Make certain both clutch levers are released.
2. Place the throttle control lever in FAST or START position.
3. Move choke lever to CHOKE position.


Note: A warm engine may not require choking.

4. Stand at side of tiller. Grasp the starter handle and pull out rapidly. Return it slowly to the engine. Repeat as necessary.
5. After engine starts, move choke lever gradually to RUN position.

To Stop Engine—Move throttle control lever to STOP position. Disconnect spark plug wire from the spark plug and ground against the engine to prevent accidental starting.



SECTION 3 REGULAR MAINTENANCE

 **WARNING:** TO PREVENT ACCIDENTAL STARTING when performing any maintenance or repairs, always disconnect spark plug wire from spark plug and ground against the engine.

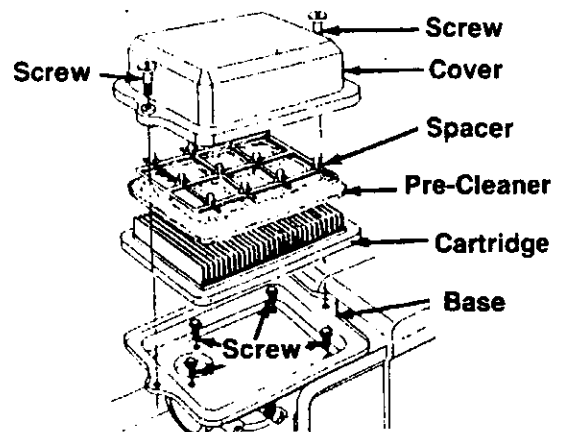
Check Oil Level after each five hours of operation. BE SURE PROPER OIL LEVEL IS MAINTAINED.

Change Oil after first five hours of operation. Thereafter change engine oil every 50 hours, under normal operating conditions. Change engine oil every 25 hours of operation if the engine is operated under heavy load, or in high ambient temperatures. Change oil while engine is warm.

Service Air Cleaner—Clean cartridge at three month intervals or every 25 hours, whichever occurs first.


NOTE: Service more often under dusty conditions.

1. Loosen screw and tilt cover as illustrated.
2. Carefully remove pre-cleaner and cartridge.
3. Clean cartridge by tapping gently on a flat surface. If very dirty, replace cartridge and pre-cleaner, or clean as follows:
 - a. Wash in a low or non-sudsing detergent and warm water solution. **Caution:** Do not use petroleum solvents such as kerosene, to clean cartridge.
 - b. Rinse thoroughly with flowing water from inside out until water is clear.
 - c. Allow cartridge to stand and air dry **thoroughly** before using. **DO NOT OIL CARTRIDGE OR PRE-CLEANER. DO NOT USE PRESSURIZED AIR TO CLEAN OR DRY CARTRIDGE.**



4. Install cartridge and pre-cleaner. Then close cover and fasten screws securely.

Clean Engine—Remove dirt and debris with a cloth or brush. Cleaning with a forceful spray of water is not recommended as water could contaminate the fuel system.

 **WARNING:** Periodically clean muffler area to remove all dirt and combustible debris.

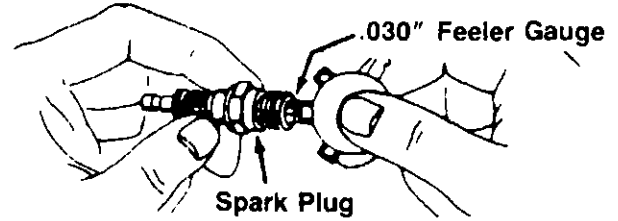
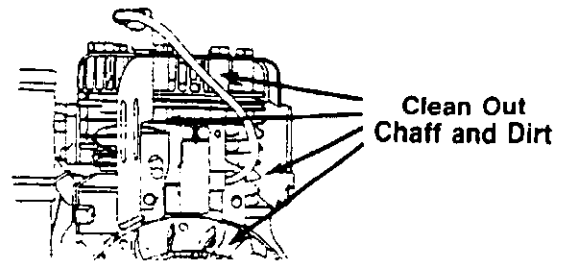
Clean Cooling System

Yearly or every 100 hours, whichever occurs first, remove the blower housing and clean the area shown to avoid overspeeding, overheating and engine damage. Clean more often if necessary.

Remove Combustion Deposits every 100-300 hours of operation. Remove cylinder head and cylinder head shield. Scrape and wire brush the combustion deposits from cylinder, cylinder head, top of piston and around valves. Use a soft brush to remove deposits. Re-assemble gasket, cylinder head and cylinder head shield. Turn screws down finger tight, with the three longer screws around the exhaust valve. Torque cylinder head screws in a staggered sequence to 140 inch pounds (15.82 Nm).

Spark Plug—Clean and reset gap at .030" every 100 hours of operation.

NOTE: Do not blast clean spark plug. Spark plug should be cleaned by scraping or wire brushing and washing with a commercial solvent.




Caution: Sparking can occur if wire terminal does not fit firmly on spark plug, or if stop switch vibrates against spark plug. Retorm terminal or repair switch if necessary.

Spark Arrester Equipped Muffler—If engine muffler is equipped with spark arrester screen assembly, remove every 50 hours for cleaning and inspection. Replace if damaged.

SECTION 4 ADJUSTMENTS

CARBURETOR ADJUSTMENT

 **WARNING:** If any adjustments are made to the engine while the engine is running (e.g. carburetor), keep clear of all moving parts. Be careful of heated surfaces and muffler.

Minor carburetor adjustment may be required to compensate for differences in fuel, temperature, altitude or load.

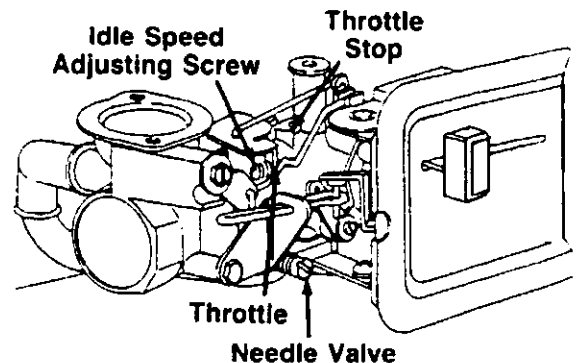
NOTE: The air cleaner must be assembled to carburetor when running engine.

To Adjust Carburetor—Gently turn idle mixture valve clockwise until it just closes. Valve may be damaged by turning it in too far.

Next, open the valve 1½ turns counterclockwise. This initial adjustment will permit the engine to be started and warmed up (approximately 5 minutes) prior to final adjustment.

Final Adjustment—Place throttle control lever in SLOW position. Then rotate throttle counterclockwise and hold against throttle stop while adjusting idle RPM

by turning idle speed adjusting screw to obtain 1750 RPM. Turn idle mixture valve in (clockwise—lean mixture) until engine just starts to slow. Then turn idle mixture valve out (counterclockwise—rich mixture) until engine runs unevenly. Now turn idle mixture valve midway between rich and lean. Release throttle—engine should accelerate smoothly. If engine does not accelerate properly, the carburetor should be readjusted, usually to a slightly richer mixture by turning idle mixture valve counterclockwise 1/8 turn more.



CONTROL ADJUSTMENTS

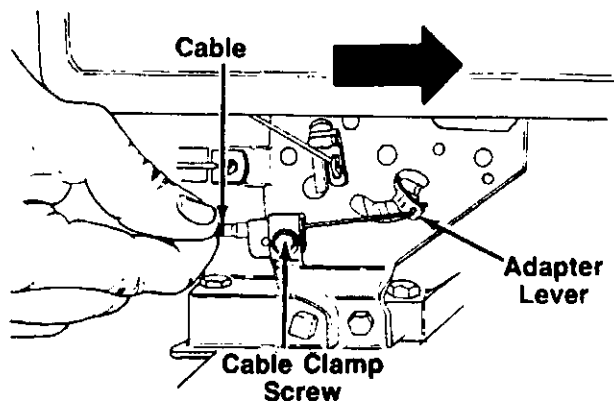
The throttle control must be properly adjusted to stop, start and operate the engine at maximum speed.

The acceptable operating speed range is 1800 to 3600 RPM. Idle speed is 1750 RPM. The manufacturer of the equipment on which the engine is used, specifies the top governed no load speed at which the engine may be operated. DO NOT EXCEED this speed.

To Adjust Throttle Control:

1. Loosen the cable clamp screw. See illustration.
2. With the throttle control in FAST position and the cable connected to the adapter lever, push the cable through the cable clamp in the direction shown until the adapter lever is as far up as it will go.
3. Tighten the cable clamp screw.

4. Check that the engine stops when throttle control is moved to STOP position. If engine does not stop, loosen cable clamp screw and readjust by pulling cable backward slightly until engine stops. Retighten cable clamp screw.



SECTION 5 GENERAL INFORMATION

ENGINE DESIGN

This engine is single-cylinder L-head, air-cooled type.

MODEL SERIES 130202

Bore 2-9/16" (65.09 mm)
Stroke 2-7/16" (61.91 mm)
Displacement 12.57 cu. in. (206 cc)
Horsepower Max. 5.0 @ 3600 RPM
Torque (Ft.-Lbs.) Max. 7.66 @ 2900 RPM

The horsepower ratings listed are established in accordance with the Society of Automotive Engineers Test Code-J607. For practical operation, the horsepower loading should not exceed 85% of these ratings. Engine power will decrease 3½% for each 1,000 feet above sea level and 1% for each 10° above 60° F.

In some areas, local law requires the use of a resistor spark plug so as to suppress ignition signals. If an engine was originally equipped with a resistor spark plug, be sure to use the same type of spark plug for replacement.

Major engine repairs should not be attempted unless you have the proper tools and a thorough knowledge of internal combustion engines.

TUNE-UP SPECIFICATIONS

Spark Plug Type	Champion	Autolite
Short Plug	CJ-8	235
Long Plug	J-8C	295
Resistor Short Plug	RCJ-8	245
Resistor Long Plug	RJ-8C	306

Spark Plug Gap030"
Intake Valve Clearance005"-.007"
Exhaust Valve Clearance009"-.011"

STORAGE INSTRUCTIONS

Engines to be stored over 30 days should be completely drained of fuel to prevent gum deposits forming on essential carburetor parts, fuel filter and tank.

NOTE: The use of a fuel additive, such as STABIL, or an equivalent, will minimize the formation of fuel gum deposits during storage. Such an additive may be added to the gasoline in the fuel tank of the engine, or to the gasoline in a storage container.

- a. All fuel should be removed from the tank. Run the engine until it stops from lack of fuel.
- b. While engine is still warm, drain oil from crankcase. Refill with fresh oil.
- c. Remove spark plug, pour approximately ½ ounce (15 cc) of engine oil into cylinder and crank slowly to distribute oil. Replace spark plug.
- d. Clean dirt and chaff from cylinder, cylinder head fins, blower housing, rotating screen and muffler areas.
- e. Store in a clean, dry area.

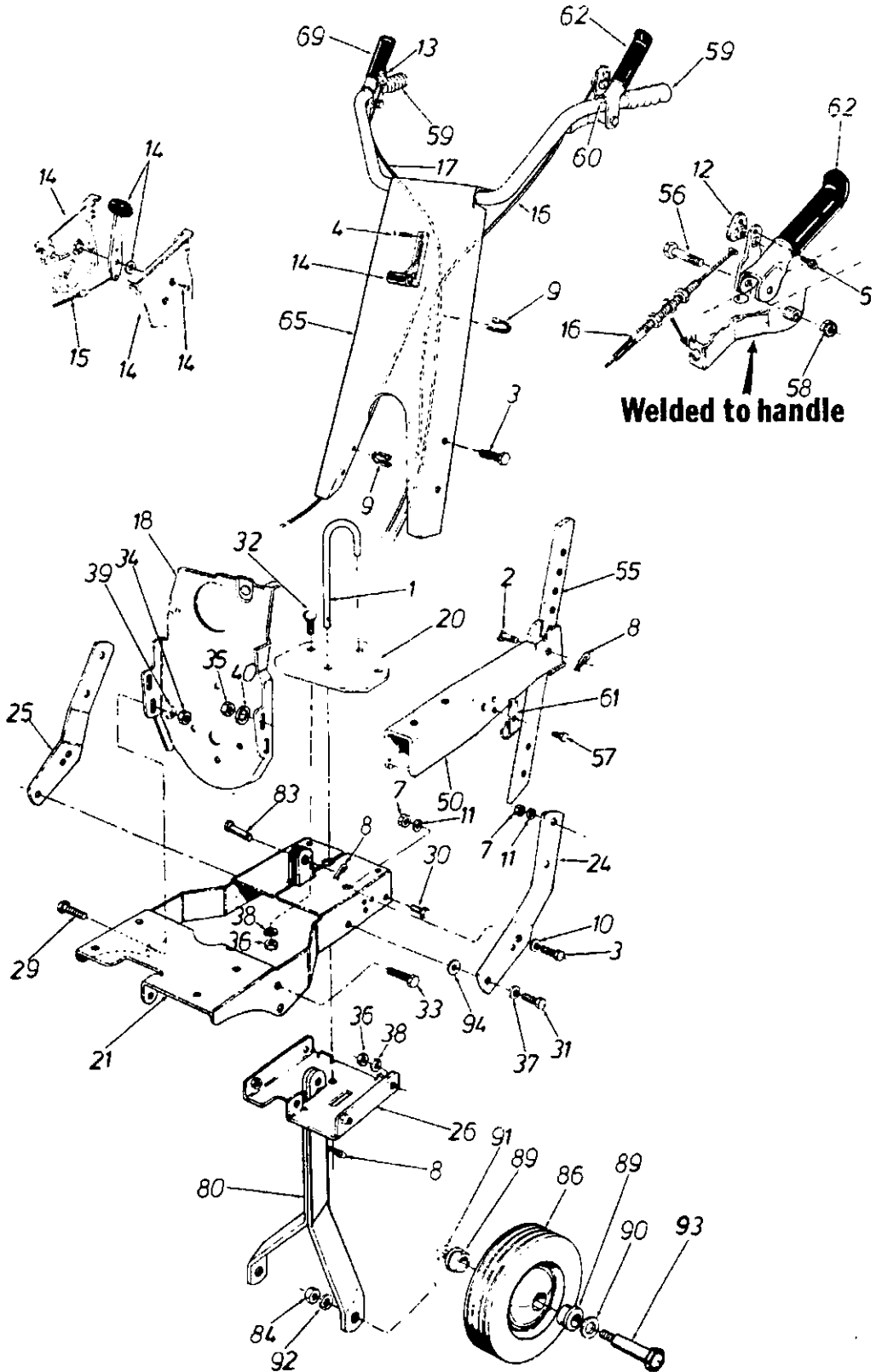
Trouble Shooting Guide

Trouble	Possible Cause(s)	Corrective Action
Engine fails to start	<ol style="list-style-type: none"> 1. Fuel tank empty, or stale fuel. 2. Throttle control lever not in starting position. 3. Blocked fuel line. 4. Spark plug wire disconnected. 5. Faulty spark plug. 6. Engine flooded. 	<ol style="list-style-type: none"> 1. Fill tank with clean, fresh gasoline. 2. Move throttle lever to start position. 3. Clean fuel line. 4. Connect wire to spark plug. 5. Clean, adjust gap or replace.† 6. Remove spark plug, dry the plug, and crank engine with plug removed and throttle in off position. Replace spark plug, connect wire and resume starting procedures.
Engine runs erratic	<ol style="list-style-type: none"> 1. Unit running on CHOKE. 2. Spark plug wire loose. 3. Blocked fuel line or stale fuel. 4. Vent in gas cap plugged. 5. Water or dirt in fuel system. 6. Dirty air cleaner. 7. Carburetor out of adjustment. 	<ol style="list-style-type: none"> 1. Move choke lever to OFF position. 2. Connect and tighten spark plug wire. 3. Clean fuel line; fill tank with clean, fresh gasoline. 4. Clear vent. 5. Drain fuel tank. Refill with fresh fuel. 6. Clean air cleaner.† 7. Adjust carburetor.†
Engine overheats	<ol style="list-style-type: none"> 1. Engine oil level low. 2. Air flow restricted. 3. Carburetor not adjusted properly. 	<ol style="list-style-type: none"> 1. Fill crankcase with proper oil.† 2. Remove blower housing and clean.† 3. Adjust carburetor.†
Tines do not engage	<ol style="list-style-type: none"> 1. Foreign object lodged in tines. 2. Tine clevis pin(s) missing. 3. Control cable not adjusted properly. 4. Belt worn and/or stretched. 	<ol style="list-style-type: none"> 1. Dislodge foreign object. 2. Replace tine clevis pin(s). 3. Adjust control cable (see assembly instructions). 4. Replace belt.

†Refer to separate engine section of this manual.

NOTE: For repairs beyond the minor adjustments listed above, please contact your nearest authorized servicer.

**ILLUSTRATED PARTS FOR MODEL
MTD2105A98 FRONT TINE TILLER**



PARTS LIST FOR MODEL MTD2105A98 FRONT TINE TILLER

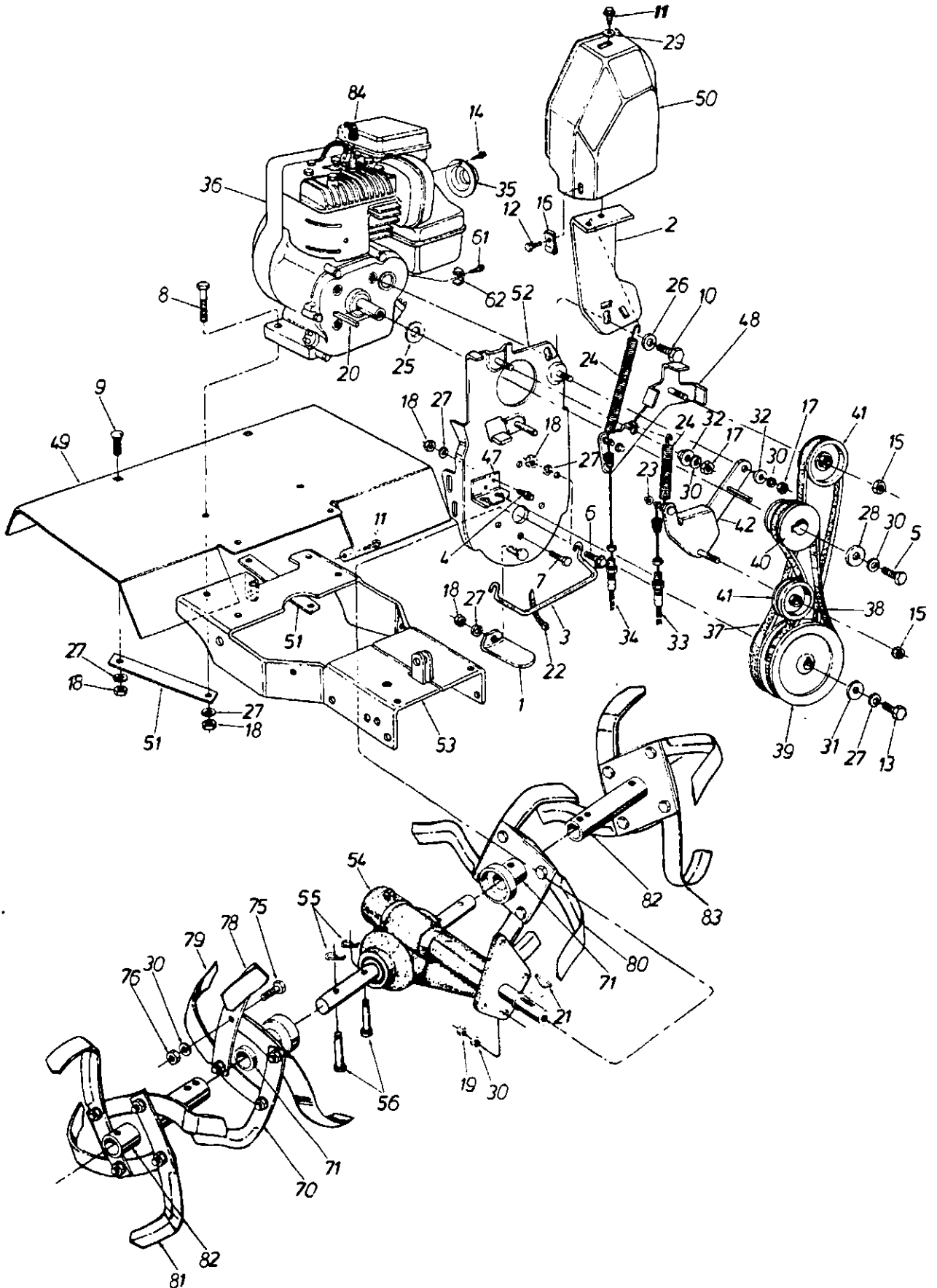
REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION
1	04602	U-Clevis Pin .5" Dia.	34	712-0214	Hex L-Nut 3/8-24 Thd.
2	1545-029	Clevis Pin 2" Lg.	35	712-0239	Hex L-Nut 1/2-20 Thd.
3	710-0253	Hex Bolt 3/8-16 x 1.0" Lg.*	36	712-0267	Hex Nut 5/16-18 Thd.*
4	710-0779A	Truss Mach. AB-Tap Scr. #10 x .5" Lg.	37	736-0105	Bell-Wash. 3/8" I.D.
5	710-0919	Hex B-Tap Scr. #10 x .44" Lg.	38	736-0119	L-Wash. 5/16" I.D.*
7	712-0798	Hex Nut 3/8-16 Thc.*	39	736-0148	Extern. L-Wash. 3/8" I.D.
8	714-0149B	Internal Cotter Pin	40	736-0190	Extern. L-Wash. 1/2" I.D.
9	725-0157	Cable Tie	50	06807-638	Tailpiece Ass'y.
10	736-0105	Bell-Wash. 3/8" I.D.	55	06811-638	Depth Stake
11	736-0169	L-Wash. 3/8" I.D.	56	710-0151	Hex Bolt 3/8-24 x 2.0" Lg.
12	746-0605	Barrel Cable Hold-Down—L.H.	57	710-0599	Hex TT-Tap Scr. 1/4-20 x 1/2" Lg.
13	746-0606	Barrel Cable Hold-Down—R.H.	58	712-0116	Hex Ins. L-Nut 3/8-24 Thd.
14	831-0823A	Throttle Control Box Ass'y.	59	720-0180	Grip Handle
15	746-0503	Throttle Control Wire—35"	60	726-0247	Push Cap (For Handles)
16	746-0619B	Clutch Control Cable—(Forward)	61	732-0322	Depth Stake—Spring
17	746-0620B	Clutch Control Cable—(Reverse)	62	784-0202	Clutch Grip Ass'y.—L.H.
18	784-0250	Mounting Plate Ass'y.	65	784-0243-638	Handle Ass'y.
20	04586	U-Channel Plate	69	784-0255	Clutch Grip Ass'y.—R.H.
21	04697A-638	Tiller Frame Ass'y.	80	06813	Wheel Yoke Ass'y.
24	06805	Handle Brkt.—L.H.	83	1545-029	Clevis Pin 2" Lg.
25	06806	Handle Brkt.—R.H.	84	712-0200A	Hex Jam Nut 1/2-20 Thd.
26	06816	U-Channel Brkt. Ass'y.	86	734-0584	Wheel Ass'y. 10 x 1.75
29	710-0152	Hex Bolt 3/8-24 x 1 0"	89	741-0116	Flange Brg. .631 I.D.
30	710-0198	Hex Sems Scr 5/16-18 x .75 Lg.	90	736-0187	Fl-Wash. .640" x 1.24" x .06"
31	710-0253	Hex Bolt 3/8-16 x 1 0" Lg.	91	736-0253	Bell-Wash. 1/2" I.D.
32	710-0451	Carr. Bolt 5/16-18 x .75 Lg.	92	736-0921	L-Wash. 1/2" I.D.*
33	710-0592	Hex Bolt 1/2-20 x 1 0" Lg. (Spec.)	93	738-0318	Shoulder Bolt .625" Dia. x 2.75"
			94	736-0300	Fl-Wash. 3/8" I.D.

*For faster service obtain standard nuts, bolts, and washers locally. If these items cannot be obtained locally, order by part number and size as shown on parts list.



Specifications subject to change without notice or obligation.

ILLUSTRATED PARTS FOR MODEL
MTD2105A98 FRONT TINE TILLER



PARTS LIST FOR MODEL MTD2105A98 FRONT TINE TILLER

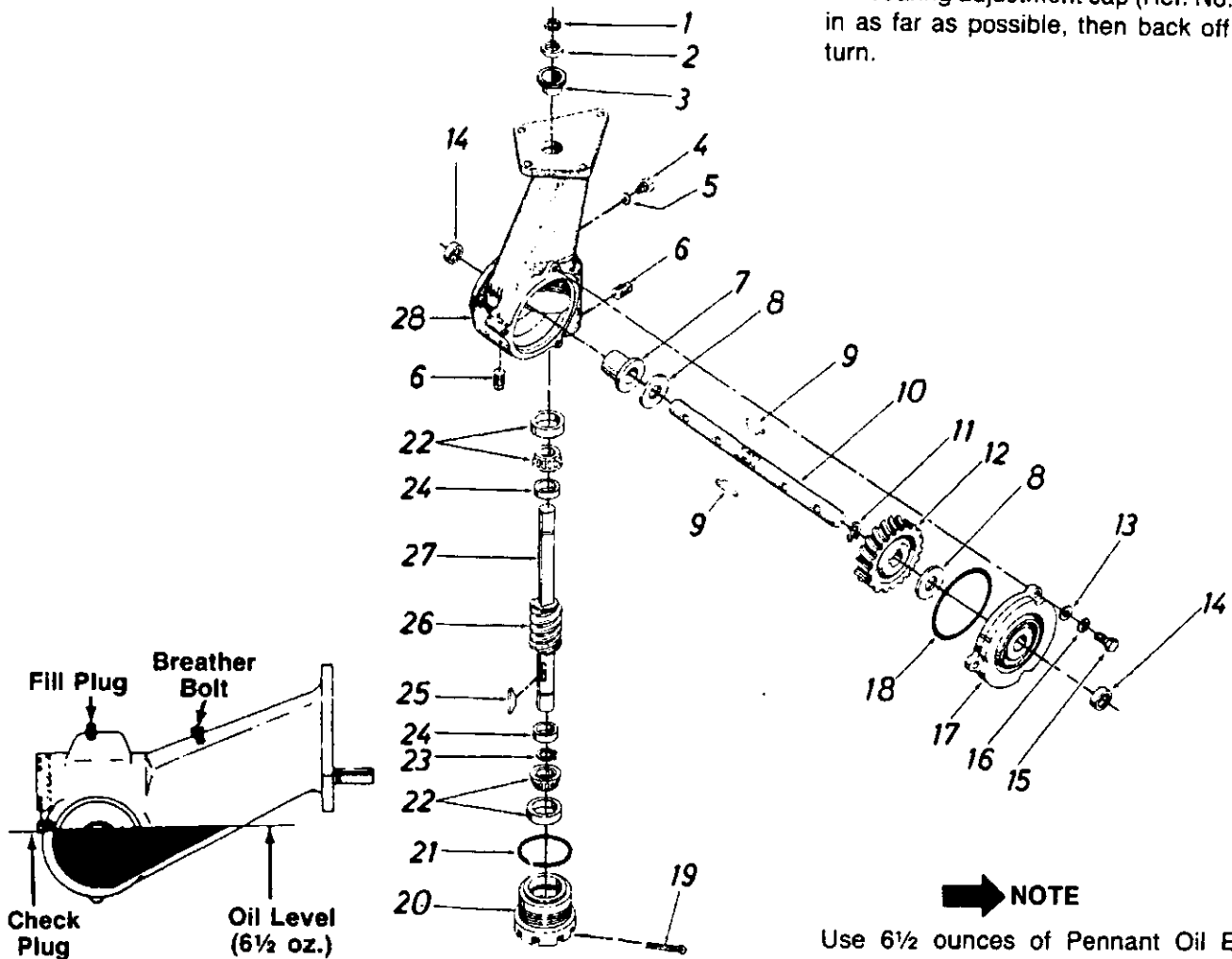
REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION
1	04648	Belt Guard	34	746-0620B	Clutch Control Cable (Reverse)
2	04657A	Bracket			Muffler Deflector
3	04704A	Belt Retainer	35	751-0233	Engine—B&S 130202-3166-01
4	710-0118	Hex Bolt 5/16-18 x 75" Lg.*	36	5 H.P.	V-Belt 44" Lg.
5	710-0191	Hex Bolt 3/8-24 x 1 25" Lg.*	37	754-0189	V-Belt 37" Lg.
6	710-0198	Hex Sems Scr. 5/16-18 x .75" Lg.	38	754-0255	Transmission Pulley
7	710-0342	Hex Bolt 3/8-16 x 1 25" Lg.*	39	756-0221	Engine Pulley
8	710-0380	Hex Bolt 5/16-18 x 1.75" Lg.*	40	756-0223	FI-Idler Pulley
9	710-0451	Carr. Bolt 5/16-18 x .75" Lg.	41	756-0225	Tine Idler Brkt. Ass'y.
10	710-0157	Hex Bolt 5/16-24 x .75" Lg.	42	784-0221	Clutch Cable Bracket
11	710-0599	Hex TT-Tap Scr. 1/4-20 x .5" Lg.	47	784-0226	Idler Bracket Ass'y.
12	710-0642	Hex TT-Tap Scr. 1/4-20 x .75" Lg.	48	784-0237	Tine Shield
13	710-0643	Hex L-Scr. 5/16-18 x 1.0" Lg.	49	784-0240	Belt Guard
14	710-0783	Hex Wash. Hd. Slotted Scr. #8-32 x .38" Lg.	50	784-0241	Brkt. Tine Shield Reinforcement
15	712-0116	Hex Ins. L-Nut 3/8-24 Thd.	51	784-0246A	Mounting Plate Ass'y.
16	712-0185	Speed Nut 1/4-20 Thd.	52	784-0250	Tiller Frame Ass'y.
17	712-0241	Hex Nut 3/8-24 Thd.	53	04697	Transmission Ass'y. Comp. (See Breakdown)
18	712-0267	Hex Nut 5/16-18 Thd.*	54	717-0304	Internal Cotter Pin
19	712-0798	Hex Nut 3/8-16 Thd.*	55	714-0149B	Clevis Pin
20	714-0105	Sq. Key 3/16 x 1.0"	56	1545-029	Hex Sems Scr. #10-32 x .62" Lg.
21	714-0126	#9 Hi-Pro Key 3/16 x 3/4"	61	710-0899A	Casing Clamp
22	725-0157	Cable Tie	62	751-0360A	Inner Tine Adapter Ass'y. Comp.—L.H.
23	726-0106	Cap Speed Nut 1/4 Rod	70	04675	Inner Tine Adapter Ass'y.
24	732-0562	Extension Spring 3-5/8" Lg.	71	04673	Hex Bolt 3/8-24 x 1.25" Lg.*
25	736-0315	FI-Wash. 3/4" I.D. x 1.5" O.D.	75	710-0191	Hex Nut 3/8-24
26	736-0119	L-Wash. 5/16" I.D.*	76	712-0241	Tine 14"—L.H.
27	736-0119	L-Wash. 5/16" I.D.*	78	742-0107	Tine 14"—R.H.
28	736-0133	FI-Wash. .406" x 1.25" x .10"	79	742-0108	Inner Tine Adapter Ass'y. Comp.—R.H.
29	736-0142	FI-Wash. .281 I.D. x .50 O.D. x .063"	80	04676	Outer Tine Adapter Ass'y. Comp.—L.H.
30	736-0169	L-Wash. 3/8" I.D.*	81	04695	Outer Tine Adapter Ass'y. Comp.—L.H.
31	736-0231	FI-Wash. .344" x 1.125" x .125"	82	06797	Outer Tine Adapter Ass'y. Comp.—R.H.
32	738-0372	Shoulder Spacer	83	04696	Spark Plug Boot
33	746-0619B	Clutch Control Cable (Forward)	84	735-0639	

*For faster service obtain standard nuts, bolts, and washers locally. If these items cannot be obtained locally, order by part number and size as shown on parts list.

**ILLUSTRATED PARTS FOR MODEL
MTD2105A98 FRONT TINE TILLER**

➔ IMPORTANT

After every 5 hours of operation, screw the bearing adjustment cap (Ref. No. 20) in as far as possible, then back off 1/2 turn.



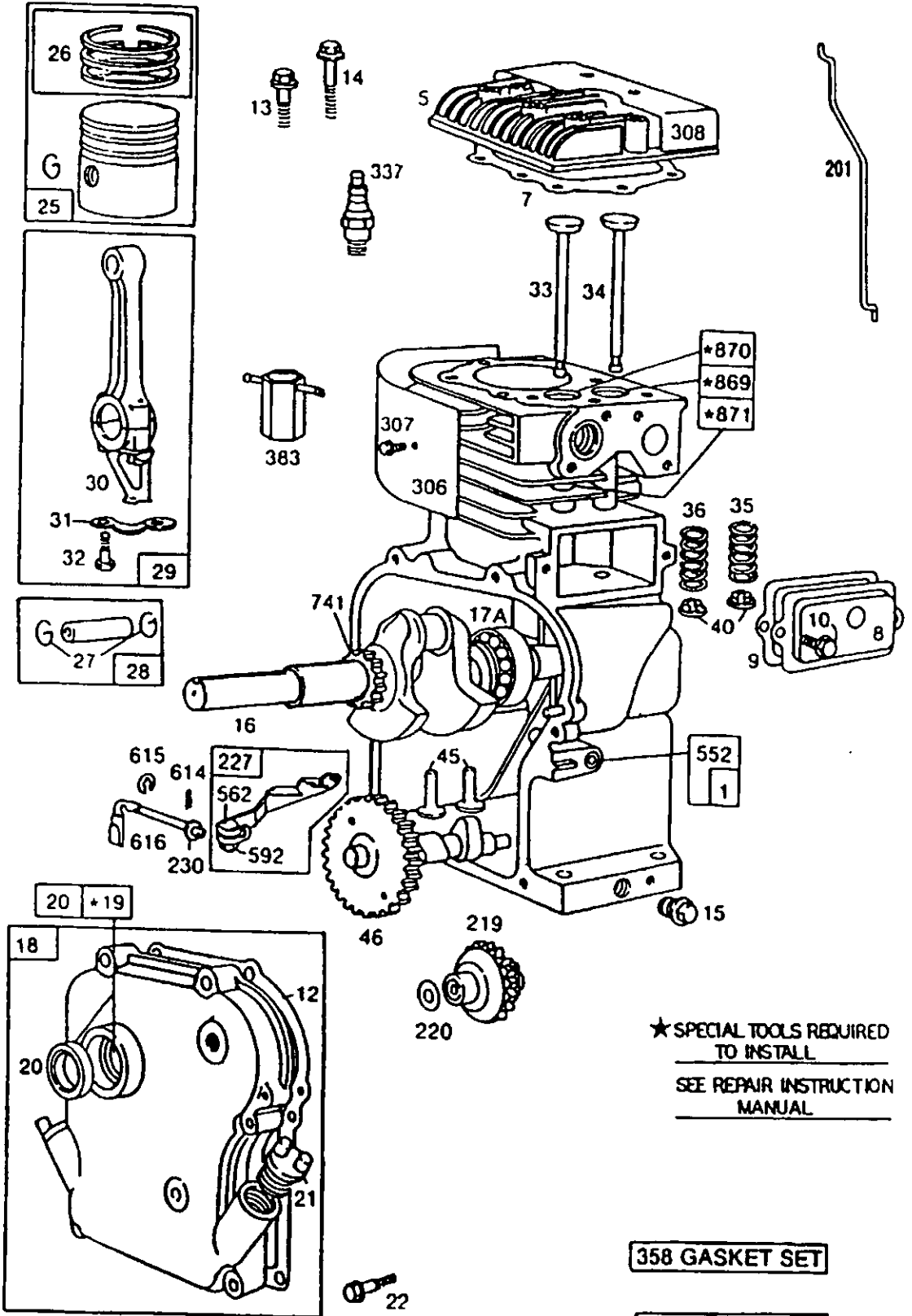
➔ NOTE

Use 6 1/2 ounces of Pennant Oil E.P. #35000. Order Part No. 737-0136.

PARTS LIST FOR TRANSMISSION ASSEMBLY 717-0304

REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION
1	716-0119	Snap Ring .75" Dia. Shaft	15	710-0371	Hex Scr. 5/16-18 x .88" Lg. (Plastic Insert)
2	721-0100	Oil Seal .75" Dia. Shaft	16	736-0261	Wash.—Flat Toothed (Special)
3	741-0197	Sleeve Brg. .752" x .878" x 1.0"	17	741-0188	Bearing Cap with Bearing
4	710-0599	Hex Wash. Self-Tap Scr.	18	735-0101	O-Ring 3.62" x 3.88"
5	736-0222	External L-Wash. 1/4" I.D.	19	714-0474	Cotter Pin 1/8" Dia. x .75"
6	737-0103	Sq. Hd. Pipe Plug 3/8" Thd.*	20	10583	Bearing Adjustment Cap
7	741-0189	Flange Brg. 1.0" I.D.	21	735-0100	O-Ring 2.12" x 2.28"
8	736-0259	Fl-Wash. 1.0" x 1.62" x .095"	22	741-0107	Roller Bearing Ass'y. .75 I.D.
9	714-0103	#91 Woodruff Key 1/4 x 3/4" Dia.	23	716-0101	Snap Ring—.75" Dia. Shaft
10	711-0622	Tine Shaft 1.0" Dia.	24	711-0469	Spacer .755 I.D. x 1.265 O.D.
11	716-0102	Snap Ring—1.0" Dia. Shaft	25	714-0126	#9 Hi-Pro Key 3/16 x .75" Dia.
12	717-0311	Worm Wheel	26	717-0312	Worm
13	736-0119	L-Wash. 5/16" I.D.*	27	738-0170	Worm Shaft
14	721-0102	Oil Seal Double Lip 1.0" Shaft	28	719-0223	Transmission Case
			—	737-0136	E.P. Oil #35000

ILLUSTRATED PARTS FOR 130202-3166-01 ENGINE
FOR MODEL MTD2105A98 FRONT TINE TILLER



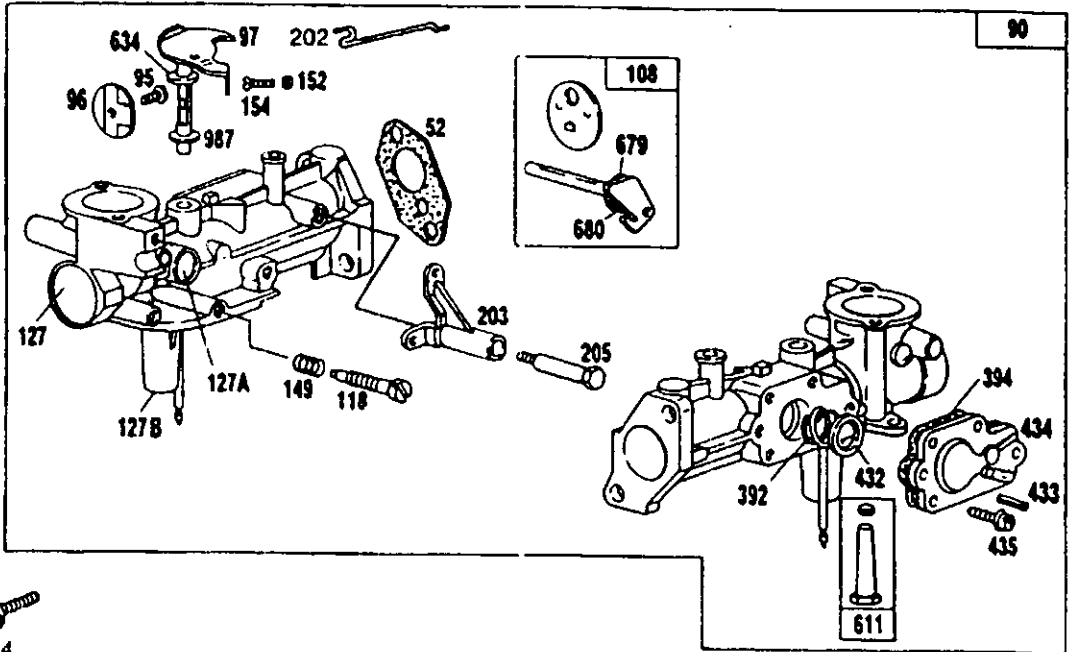
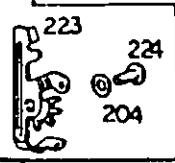
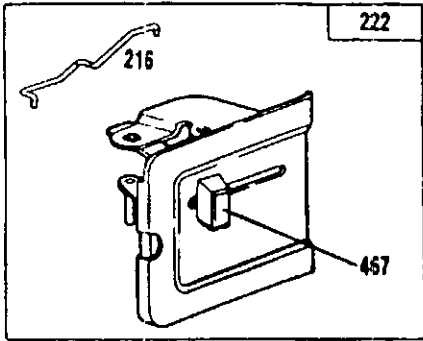
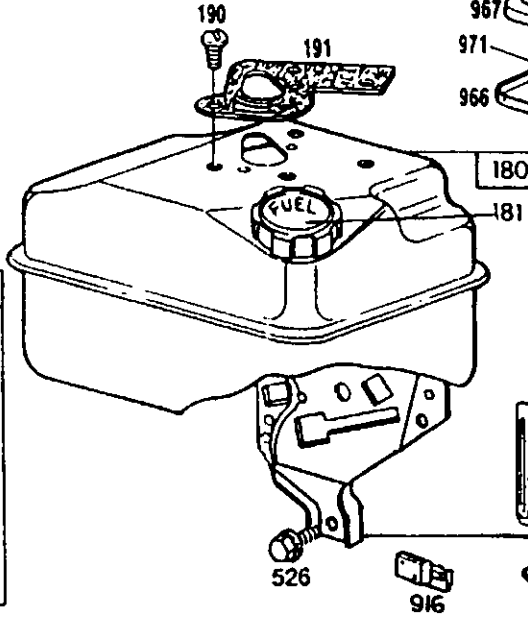
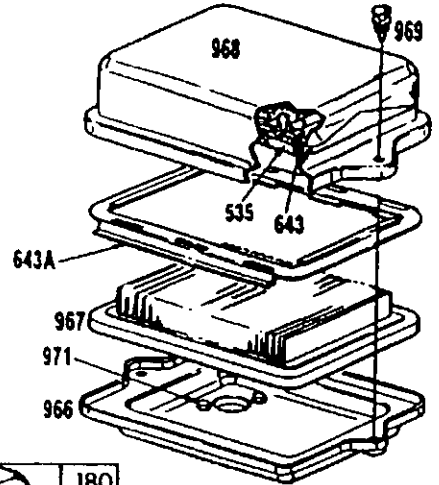
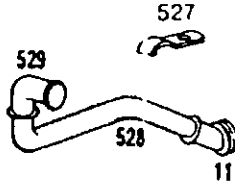
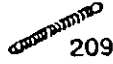
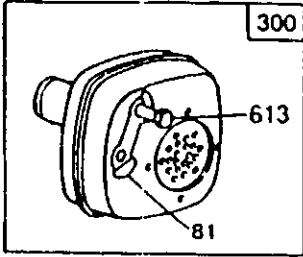
★ SPECIAL TOOLS REQUIRED
TO INSTALL

SEE REPAIR INSTRUCTION
MANUAL

358 GASKET SET

1019 Decal Kit

ILLUSTRATED PARTS FOR 130202-3166-01 ENGINE
FOR MODEL MTD2105A98 FRONT TINE TILLER



**PARTS LIST FOR 130202-3166-01 ENGINE
FOR MODEL MTD2105A98 FRONT TINE TILLER**

REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION
1	395990	Cylinder Assembly	35	260552	Spring—Intake Valve
2	297565	Bushing—Cylinder Note: Requires special tools for installation.	36	26478	Spring—Exhaust Valve
3	299819	Seal—Oil	37	222443	Guard—Flywheel
5	211542	Head—Cylinder	40	93312	Retainer—Valve Spring
7	*270383	Gasket—Cylinder Head	45	260642	Tappet—Valve
8	294178	Breather—Valve Chamber	46	212733	Gear—Cam
9	*27549	Gasket—Valve Cover	52	*271937	Gasket—Carburetor Mounting (2)
10	93394	Screw—Breather Mtg. Sem	55	299431	Housing—Rewind Starter
11	66578	Grommet—Breather Tube	56	295871	Pulley—Rewind Starter
12	*270080	Gasket—Crankcase—.015" Thick (Standard)	57	490179	Spring—Rewind Starter
	*270125	Gasket—Crankcase—.005" Thick	58	66884	Rope—Rewind Starter—63" Long If longer rope is required, order rope No. 66894 and cut to length.
	*270126	Gasket—Crankcase—.009" Thick	59	230228	Pin—Starter Grip
13	93368	Screw—Cylinder Head (2-3/32" Long)	60	66728	Grip—Starter Rope
14	93369	Screw—Cylinder Head (2-15/32" Long)	65	94128	Screw—Stamped Steel Housing Mtg. Sem
15	91249	Plug—Pipe, 1/4" Std. Square Head To Replace Crankshaft Gear Pin, Order Part No. 230978	66	399671	Clutch Ass'y.—Rewind Starter
16	397103	Crankshaft	67	394897	Housing—Starter Clutch
18	398078	Cover Ass'y.—Crankcase	68	63770	Ball—Clutch
19	297603	Bushing—Crankcase Cover Note: Requires special tools for installation.	70	298799	Ratchet—Rewind Starter
20	294606	Seal—Oil	71	394506	Washer—Clutch Retainer
21	66768	Plug—Oil Filler	73	221923	Screen—Starter Pulley
22	93032	Screw—Crankcase Cover Mounting Sem	74	93490	Screw—Sem
23	297229	Flywheel—Magneto	75	220865	Washer—Spring
24	222698	Key—Flywheel	81	222263	Lock—Screw (3/8" Dia. Bolt Holes)
25	298904	Piston Ass'y.—Standard	90	490533	Carburetor Assembly
	298905	Piston Ass'y.—.010" O.S.	95	93499	Screw—Throttle Valve to Shaft Sem
	298906	Piston Ass'y.—.020" O.S.	96	223793	Throttle—Carburetor
	298907	Piston Ass'y.—.030" O.S.	97	490048	Shaft and Lever—Throttle
		PISTON RING SETS:	108	491177	Valve Group—Choke
		Note: For Chrome Piston Ring Set—Standard Size—Order Part No. 299742.	118	231533	Valve—Needle
26	298982	Ring Set—Standard Piston	124	93357	Screw—Hex. Head
	298983	Ring Set—.010" O.S. Piston	127	220352	Plug—Welch
	298984	Ring Set—.020" O.S. Piston	127A	223789	Plug—Welch (Mixing Chamber)
	298985	Ring Set—.030" O.S. Piston	127B	223472	Plug—Welch (Well)
27	26026	Lock—Piston Pin	149	26336	Spring—Needle Valve
28	298909	Pin Ass'y.—Piston—Standard	152	260575	Spring—Throttle Adjustment
	298908	Pin Ass'y.—Piston—.005" O.S.	154	93527	Screw—Machine, Rd. Hd.—5-40 x 5/8"
29	299430	Rod Ass'y.—Connecting Note: For Connecting Rod with .020" undersize Crankpin Bore—Order No. 390459.	163	271935	Gasket—Air Cleaner Mounting
30	221890	Dipper—Connecting Rod	180	490554	Tank Assembly—Fuel
31	221876	Lock—Conn. Rod Screw	181	490075	Cap—Fuel Tank
32	92296	Screw—Connecting Rod	190	94094	Screw—Fuel Tank Mounting Sem
33	211119	Valve—Exhaust	191	*271928	Gasket—Fuel Tank Mounting
34	261044	Valve—Intake	200	223886	Guide—Air
			201	262280	Link—Governor
			202	262270	Link—Throttle
			203	280720	Crank—Bell
			204	222962	Bushing—Governor Lever (Fiat)
			205	231520	Screw—Shoulder
			209	262283	Spring—Governor
			216	262359	Link—Choke

**PARTS LIST FOR 130202-3166-01 ENGINE
FOR MODEL MTD2105A98 FRONT TINE TILLER
(CONTINUED)**

REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION
219	391737	Gear—Governor	535	271933	Element—Air Cleaner
220	221551	Washer—Thrust	552	231079	Bushing—Governor Crank (1/4" I.D.)
222	490649	Bracket—Control	562	92613	Bolt—Governor Lever
223	223455	Lever—Governor Control	592	231082	Nut—Hex.—10-24
224	93491	Rivet—Governor Control Lever Mounting	608	390463	Starter Ass'y.—Rewind
227	490374	Lever Ass'y.—Governor	611	391813	Fuel Pipe and Clip Assembly
230	222450	Washer—Governor Lever	613	93935	Screw—Hex. Hd. Shoulder
300	393615	Muffler—Exhaust	614	93306	Cotter—Hairpin
304	490169	Housing—Blower	615	93307	Retainer—E-Ring
305	93158	Screw—Blower Housing Mounting	616	231077	Crank—Governor (1/4" Dia.)
306	221511	Shield—Cylinder	621	396847	Switch—Stop
307	93490	Screw—Cylinder Shield Mounting Sem	634	271853	Washer—Throttle Shaft (Foam)
308	221512	Cover—Cylinder Head	643	280737	Retainer—Foam Element
333	397358	Armature Assembly	643A	280726	Retainer—Air Filter
335	93414	Screw—Armature Mtg. Sem	655	222598	Anchor Spring
337	298809	Plug—Spark 1 1/2" High— 37-42 M.M.	676	393757	Deflector—Exhaust
346	93705	Screw—Sem	679	270382	Washer Choke Shaft (Foam)
356	398808	Wire—Ground	680	221839	Washer Choke Shaft (Brass)
358	397145	Gasket Set	741	261696	Gear—Timing
363	19069	Flywheel Puller (Optional Accessory)	851	221798	Cable Terminal—Ignition
373	92987	Nut—Hex	869	211787	Seat—Intake Valve (Standard)
383	89838	Wrench—Spark Plug	870	211172	Seat—Exhaust Valve (Standard)
392	262328	Spring—Fuel Pump Diaphragm			Note: For Options see Repair Manual.
394	270026	Diaphragm	871	231348	Guide—Exhaust Valve
432	221377	Cap—Spring			Note: 63709 Guide—Intake Valve. See Repair Instruction Manual.
433	93265	Pin—Diaphragm Cover	916	280321	Gear Rack—Governor
434	210959	Cover—Diaphragm	966	490074	Base—Air Cleaner
435	93141	Screw—Diaphragm Cover	967	389959	Filter—Air
467	280715	Knob—Control	968	223765	Cover—Air Cleaner
526	93343	Screw—Tank Bracket Mounting Sem	969	490073	Screw—Cover Mtg.
527	223786	Clamp—Breather Tube	971	94018	Screw—Air Cleaner
528	231526	Tube—Breather	987	398970	Seal—Throttle Shaft
529	67838	Grommet—Breather Tube	1016	490817	Spacer
			1019	491100	Decal (Label) Kit

*Included in Gasket Set—
Part No. 397145.

HOW AND WHERE TO ORDER REPLACEMENT PARTS

To eliminate error and to speed delivery of replacement parts, always include the following information on your order.

IMPORTANT

To correctly identify the merchandise by model number for which a part is needed, refer to the model number label located on the tine shield.

1. Complete identification of the merchandise for which the part is wanted.
 - (a) Name of Item—Front Tine Tiller
 - (b) Model No.—MTD2105A98
 - (c) Factory No.—219-355-098

2. Best possible identification of the part itself.
 - (a) Part Number—
 - (b) Part Name—
 - (c) If necessary return the old part as sample.
3. CUSTOMERS may order all replacement parts from any participating Western Auto Store.
4. If it is not possible to order through a Western Auto Store or Associate Store, replacement parts may be ordered directly from the Western Auto National Parts Distribution Center.

Western Auto National Parts Distribution Center
P.O. Box 183
Birmingham, Alabama 35283-0183
(205) 328-1501